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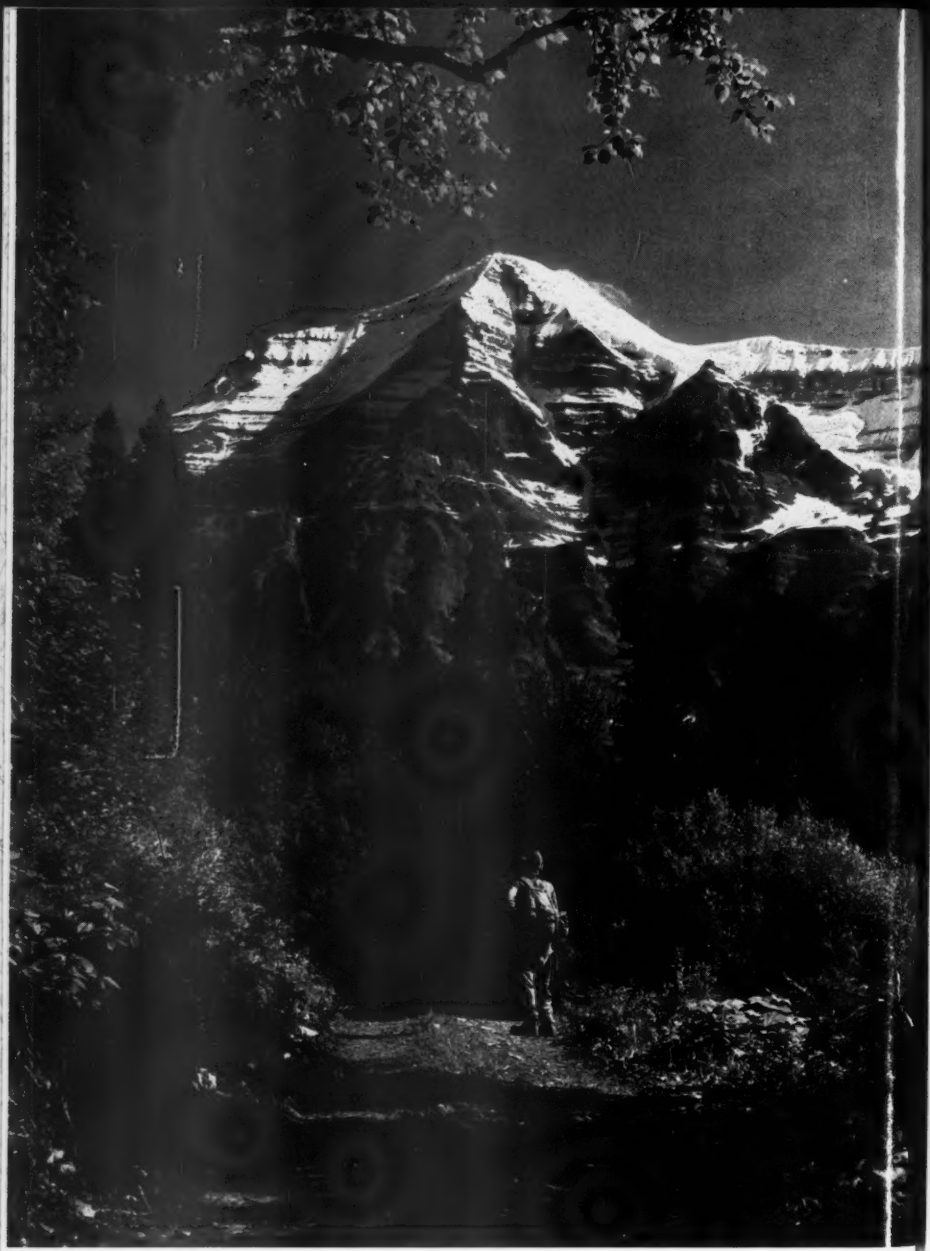


MT. ROBSON, SUMMER OF 1955

The Wishbone Arête in center. By Richard Irvin.

Ascent of the Wishbone Arête, Mt. Robson

DON CLAUNCH

NUMEROUS attempts had been made on the Southwest or "Wishbone Arête" of Mt. Robson since the first try in 1913. In that year the Swiss guide Walter Schauffelberger led Basil S. Darling and H. H. Prouty to within 400 feet of the summit, but they were turned back by lack of time in an approaching storm. Extremely slow and difficult step chopping was encountered as they worked their way over and around the fantastic ice formations near the summit. Their defeat was a crushing blow to Schauffelberger who had set his heart on reaching the goal. B. S. Darling later wrote, "Of the two climbs we made, I look back upon the first (the Wishbone attempt) with greater pleasure, and feel sure that some day the arête will become known as one of the finest rock climbs in Canada, and probably the most sporting route to the top of Robson. I hope that before long I may again be privileged to assault its gaunt, upward sweeping cliffs and stand at last upon the summit, that proudly carried frosty crest so jealously guarded by its battlements and storms." Their try was one of the most remarkable feats of mountaineering ever accomplished in the Canadian Rockies, the high point being attained after only 14 hours of travel from high camp. Snow conditions vary, but I suspect that the rocks were relatively dry.

Fred Ayres, John Oberlin, and Al Creswell made a determined attempt in 1951 and reached the second highest point ever attained on this route by coming approximately 1,800 feet from the top. Loose snow was on the verge of avalanching. They gazed upward longingly at the summit and the towers of ice guarding it, which looked as though they could well be the most formidable part of the climb. Ayres wrote, "There was no respite from continual, cautious belaying on a seemingly endless succession of towers, always exposed, and always composed of rotten rock. One of these very nearly stopped us." On both of these attempts the return was made via the snow chute of the "Great Couloir," an easier but very dangerous spot because of possible avalanches.

The Wishbone Arête is the showpiece of the two-mile high south face of Mt. Robson; it rises from the lower buttresses of the mountain and sweeps upward for 5,000 feet in an ever-thinning ridge composed of a series of cliffs and towers—long, narrow, sustained. Two branches merge

about 1,500 feet from the glittering apex, formed by the right or Schauffelberger branch and the left or north branch, and the continuation soars on—narrow and icy to the final ice cap, its extremity covered with a series of amazing ice towers.

A feeling of admiration, irresistible attraction, and cold hostility is produced in the ambitious climber gazing at this spectacle. So it was with me and others. Some of the comments made by climbers about the hope of making an ascent were not the least bit encouraging. However, it is well known that previous to nearly every interesting ascent, such remarks are made; so one merely ignores what he hears and goes along his merry way, often finding that there are no problems at all. But such was not the case with the Wishbone, as we were soon to have our hands full.

One afternoon following a break of good weather Mike Sherrick, expert rock climber and member of the Sierra Club, Harvey Firestone, medical student at UCLA, and I left Berg Lake flats for this challenging ridge. In a remarkably short time we had bypassed several cliff bands and scree slopes and found ourselves on the vast terrace of broken shale located at the 8,000-foot level. After many grueling minutes of "side-hill gouging" we crossed these great yellow bands to the west face and the accumulation of ice and snow known as Fan Glacier. High camp was set up at the east end of this glacier. The weather was very bad, and it was not too long before churning clouds announced the presence of a thunderstorm. The crashing of lightning and the slow buzzing of static electricity put our nerves on edge during the night. The next day the situation was not much better, and we found ourselves growing cynical about the chances.

The following morning we happily greeted the rising sun breaking gently through the light mists. We were in luck! The storm clouds had vanished, and every hope of beautiful weather was realized. Far above us the great ramparts and ribs forming the south side of Robson glittered, covered with a mantle of fresh snow. Fortunately for us, most of the cover was high and not thick. Streamers of avalanching snow crystals could be seen. The Wishbone could be seen clearly and in its entirety, two dark knife ridges coming together more than 3,000 feet above—cold, bleak, and menacing. Its crest was snow free, but the sides were icy and snow plastered. The famous Northwest Ridge could be seen with its ice teeth, and below, long ice slopes descended for thousands of feet. The final ridge above the juncture couldn't be seen, but instead, the chaotic mass of ice on the summit crest, directly above it.

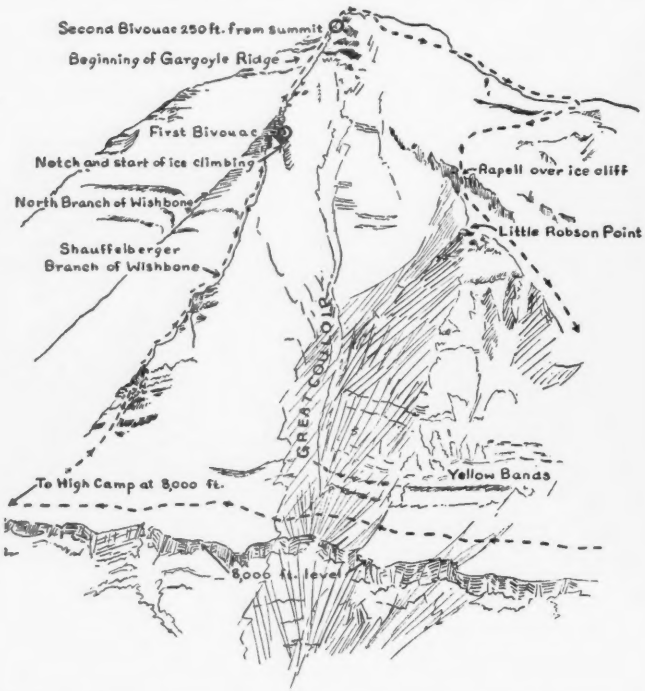
Starting at approximately 8:00 A.M. we worked toward the base of the Schauffelberger Arête, on tilted slopes of shale and limestone, shattered

into fragments of all sizes. Reaching the ridge, we climbed directly upward, going up and down over several small gendarmes. The arête is truly a masterwork of natural design, built as though it were the rib of a great cathedral. For more than a thousand feet it appears to be supported by myriads of ridgelets like flying buttresses, while below, it rests upon the solid foundation of Robson's immense south battlements. The party worked its way continually and cautiously upward through a system of couloirs on the right side of the arête, while the valley floor receded—far beneath. Emerald green Kinney Lake was now at our footsteps. Cutting back to the ridge on steep, rotten rock, we soon found evidences of previous parties. Here was a rock shelter and higher up were rapell slings. Mike led a 200-foot wall of steep slab rising directly above, icy and snow sprinkled, climbing with the rhythmic spring of a well-balanced rock climber. Basically the travel consisted of working one's way over the crest of a continually exposed knife ridge with the harder rock bands protruding as wide vertical steps.

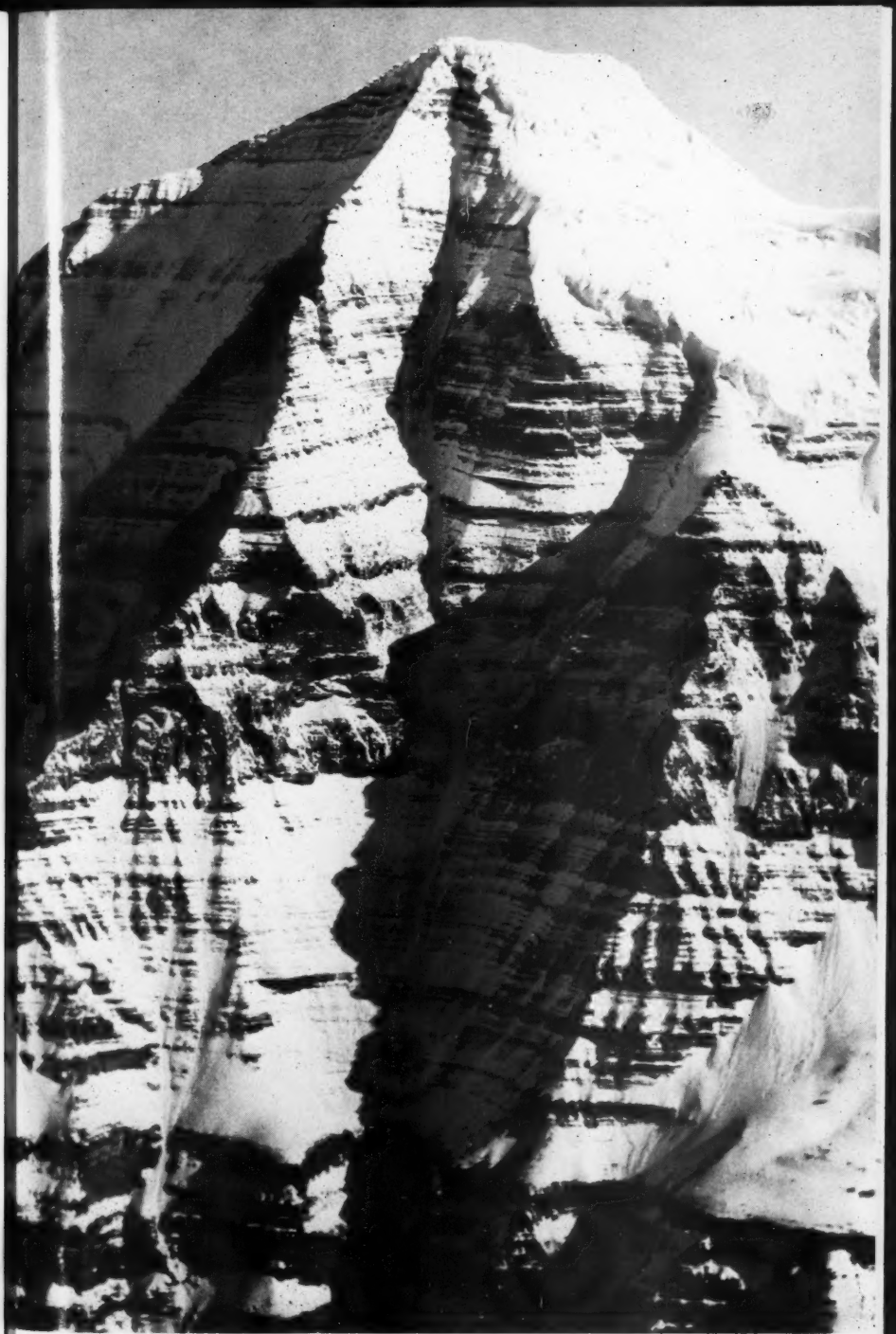
The ominous line of rock bands and gendarmes soaring above our heads was indeed appalling, and the party seemed to be getting no closer. Route finding was often troublesome because of the large number of buttresses encountered—unfortunately the result of ice on the sides of the arête; a direct attack on the cliffs was often necessary. Mike led the most difficult pitches. It would be hard to effectively describe the route here, for we could hardly remember where we had been ourselves. Essentially, the route consisted of a long series of cracks, narrow "catwalk traverses," vertical bands, terraces, and narrow ridge crests. Hours went by as the three of us climbed higher. We were almost stopped two or three times by cliffs. One of these places is particularly noteworthy. Mike went first, nimbly going over a steep wall and up three short, slippery overhanging pitches—a magnificent lead. We used about 13 pitons for safety on the rock ridge. Finally, as the day neared its end, we scaled the last big tower and dropped into an airy notch, exposed to almost 3,000 feet of air. It was getting dark and cold, and the superb display of changing colors added supreme majesty to the vast panorama of mountains and glaciers. The bivouac was a short distance above this notch on a narrow snow bank. We had an excellent tent, 240 feet of nylon rope for insulation, plenty of clothes, and candles for extra warmth. It was quite warm for some time, and I recall dozing off occasionally.

The next morning we started out in perfect weather, welcomed by radiant glaciers and soft green valleys. We cramponed up a steep slope of ice and hard snow, directly exposed to the dark abyss of the "Great

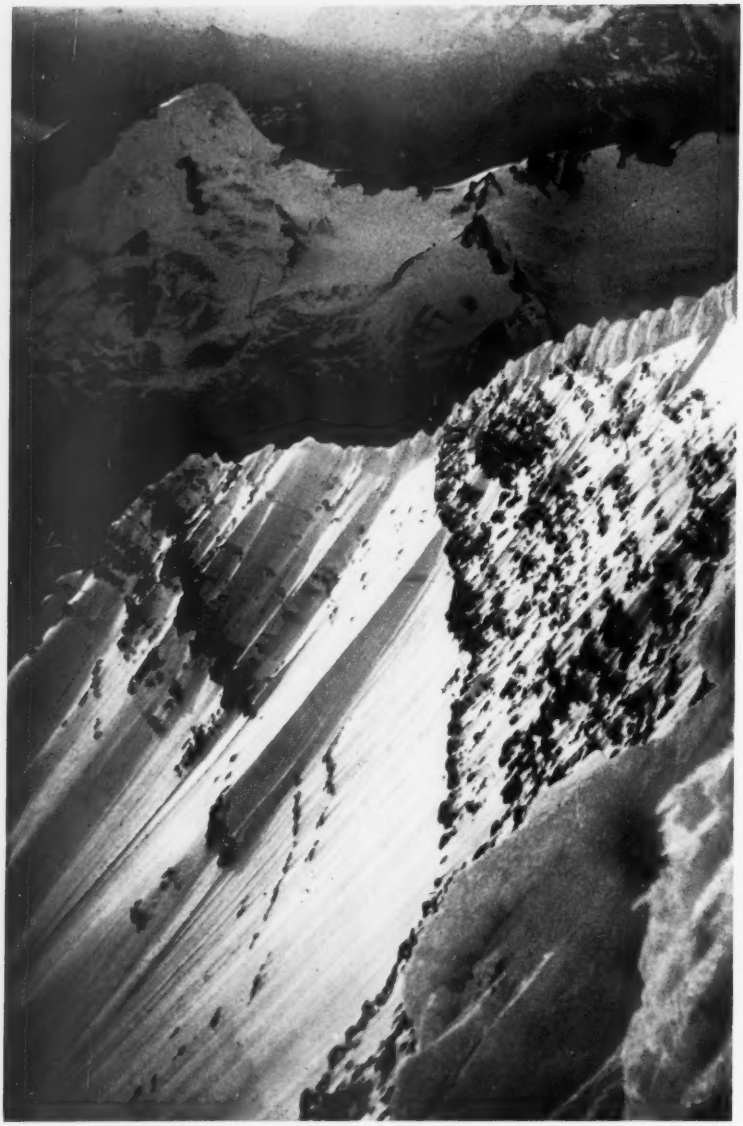
Couloir." The route continued over rock outcroppings and finally along the narrow crest of the upper ridge. Constantly belaying over thin cornices and along 50-degree ice and snow slopes, we eventually reached the strange towers of ice some 600 to 800 feet from the top. Often likened



to "gargoyles," these unusual towers of ice began as ordinary cornices but were blown straight up and eroded into weird shapes by storm and wind. They were covered with thick layers of hoarfrost feathers, rounded out, often overhanging in one direction and then in another. It was something of a battle to bypass them, almost always requiring one's climbing directly over them, on alternating ice and soft snow; only once were we able to traverse. In one place I was almost stopped, but managed to haul myself up with two ice-axes. Occasionally mists would blow in and produce a white world. In the breaks one could look down two great ice slopes, both approaching 60 degrees, to the shining threads of the



ROBSON FROM THE AIR AT 11,500 FEET
Wishbone Arête in left foreground. By Frank S. Smythe.



THE UNCLIMBED NORTHWEST RIDGE OF MOUNT ROBSON

Mount Phillips in background. Photo from the highest camp on the Wishbone. By Harvey Firestone.

Fraser and Robson Rivers. Timberline was thousands of feet below. The two thin lines of the Canadian National Railroad were apparent, looking deceptively near. The Northwest Ridge was very close and very formidable, a long line of ice teeth. To the right were the snow-covered south walls and the glacier-capped promontory of "Little Robson." The going had been extremely slow, cutting and kicking steps over about a dozen "gargoyles," but we eventually reached the final bulging walls, some 250 feet from victory. It didn't look too good above, and one attempt ended in utter failure. It became obvious that the route, instead of being easy, would be devious and tricky.

We spent another night here in a spot similar to the previous one, but this bivouac was by no means as comfortable as the other—we spent the entire night shivering in the cold tent. This perch was high, remote, and lonely in a strange ice world. Everything about us was bathed in soft moonlight, while the valleys far below were lost in the inky darkness. It was beautiful, but unfortunately we were too cold to appreciate its sublime aspects. The night seemed endless. Hours later I stepped out into the bitterly cold air and gazed at the sea of mountains still grayish in the morning light. Our position seemed perilous and isolated. Crampon straps were frozen solid and boots were like ice. We stamped our feet for some time in order to restore circulation. The cold was numbing. Whitehorn, Phillips, and Longstaff were considerably lower. The situation was tense.

Draped in excess clothes, scarfs, balaclava helmets and whatnot, we started out. I led across an intensely exposed section over the west face, using two ice pitons. Entering a 65-degree ice chute, I then worked my way upward, cutting steps and placing more pitons. An unbelayed fall here could carry someone 5,000 feet, directly to the yellow bands. Often it was possible to creep higher by inching upward on the front crampon prongs. After tediously cutting more than 150 feet of steps, we came to an unsuspected barrier at the head of the chute. Walls overhung. The only hope was to ascend a vertical section of 30 feet. I started up, stemming in a groove composed of soft snow and rotten ice. It was very exhausting, and there was no way to place pitons for safety. After 25 feet a gale was blowing snow crystals downslope—covering my beard and eyes with ice. I was almost blinded by this sudden surprise, but managed with considerable effort to climb the remaining five or six feet above the groove, delicately balanced on a thin crust. Sixty or 70 feet more and we were on the summit, greeted by clouds and evidences of an approaching rainstorm. We clasped hands. The Wishbone was the hard-

est bit of mountaineering any of us had ever done. It was hard to realize that this dreamed-of goal had been reached. I thanked God for the strength to tread the snows of this lofty, rarely conquered summit and for the scenes of grandeur uncovered as we rose higher.

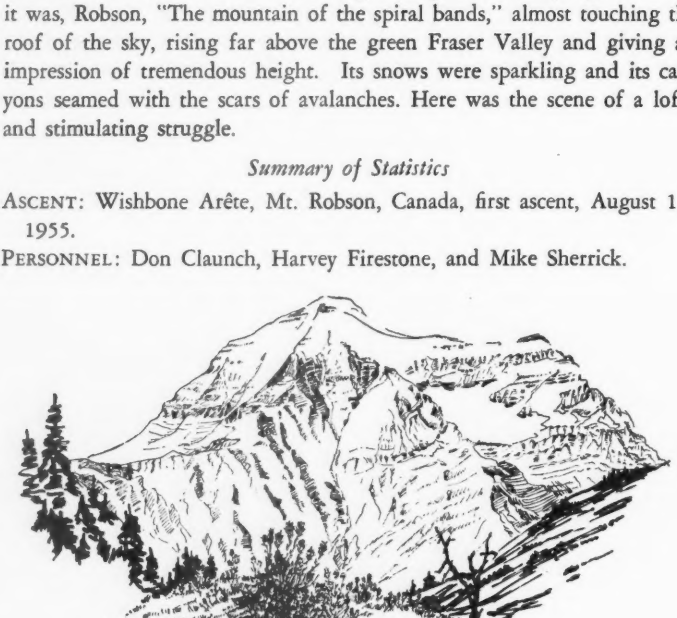
The descent was begun almost immediately down the south glaciers. It was uneventful, except for a 200-foot rappel over the upper ice cliffs. Contours of the upper glacier had changed greatly since I had been there two years before. On reaching the yellow bands we had to make a long, tedious traverse back to high camp. It was much longer than anticipated. We were tired, sleepy, quite hungry, and absolutely dehydrated. We stopped at every stream. That night we slept the sleep of exhaustion and returned the following day to Berg Lake and Hargreave's Ranch.

The next day my companions left for further adventures on Mt. Assiniboine and the Grand Tetons. I was alone once more. It was morning, the mists parted, and high above the fields and the cottonwoods was the immense south wall of Robson, gleaming in the early light. There it was, Robson, "The mountain of the spiral bands," almost touching the roof of the sky, rising far above the green Fraser Valley and giving an impression of tremendous height. Its snows were sparkling and its canyons seamed with the scars of avalanches. Here was the scene of a lofty and stimulating struggle.

Summary of Statistics

ASCENT: Wishbone Arête, Mt. Robson, Canada, first ascent, August 11, 1955.

PERSONNEL: Don Claunch, Harvey Firestone, and Mike Sherrick.



Lhotse, 1955

NORMAN G. DYHRENFURTH

WHEN leaving Mount Everest in December of 1952 I hardly dared hope that some day I would be able to return to Solo Khumbu. My original plan was to visit that area in the Fall of 1954 for some "minor" ascents, but primarily to produce documentary films. When at last I did hear from Kathmandu toward the end of January 1955, I was given permission to attempt Lhotse. It soon became quite clear that the time was too short to finance, organize, and completely outfit a major expedition for a pre-monsoon attempt. I very reluctantly decided to postpone the main climbing effort until the Fall, knowing well from previous experience that the chances of success on one of the "big" Eight-Thousanders are considerably less at that time.

Within less than a month the financial backing was found, the team members selected, and the equipment and foodstuffs assembled, the latter entirely in Switzerland and Austria. In view of the time element involved in producing several documentary films, and in making the first truly professional map by photogrammetric means of the entire Everest region, it was decided to leave for Nepal in two groups: Dipl. Ing. Erwin Schneider, outstanding cartographer and well-known Austrian mountaineer, Ernst Senn, one of Austria's leading "extreme" climbers, who had been to Broad Peak with Dr. Herrligkoffer in the Fall of 1954, and myself left Europe on March 30 by ship, taking with us the bulk of the expedition's baggage, nearly seven tons. The second group, consisting of the three Americans, George I. Bell, Fred Beckey, and Richard McGowan, and the two Swiss, Dr. Bruno Spirig and Arthur Spöhel—the latter had been to Everest with me in 1952—were to leave Europe on July 30.

After being held up the usual number of days by the incredible red tape of Bombay Customs, we reached Jogbani via milk train on April 21, where we were met by our Sherpas. On the 24th we started our approach march from Dharan Bazar with 200 porters, 120 of them from Solo Khumbu, the rest recruited locally. After a very hot march in, Namche Bazar was reached on May 9, and Dingboche on the 11th. This was to be our base of operations for the next two months, at the foot of towering Ama Dablam, a few feet above the swift waters of the Imja Khola. Here we took over three stone huts where we three, our Nepalese liaison officer

Gaya Nanda Vaidya, and the Sherpas made ourselves as comfortable as possible to live through part of the monsoon months.

While Erwin Schneider immediately began his cartographic work, Ernst Senn and I, accompanied by our Sherpas Pemba Sundar and Ang Dawa, made a two-day reconnaissance of the Imja Khola Basin to ascertain whether there might be a feasible route leading from the innermost corner of that basin (behind Island Peak, climbed by the British in 1953 and repeated by Schneider) through the heavily glaciated southern precipice of Lhotse's east ridge. We had hoped to find a route to the summit of Lhotse II, the eastern peak of our mountain, having been led to believe from examining some British pictures that there might be a definite possibility. If this was the case, Senn and I would have launched a small-scale pre-monsoon attack on Lhotse II. Unfortunately one look at the southern defenses of the east ridge convinced both of us that any attempt to establish a series of camps and to lead heavily-laden Sherpas through there would be suicidal. While we were studying that huge wall of steep ice, several avalanches broke off from a high shelf, burying the only possible avenue of approach under masses of blue-green ice. Even if one could reach the ridge, the route would be extremely long and exposed to the winds. The uppermost part of the east ridge is very steep and undoubtedly heavily corniced, and the main summit of Lhotse could not possibly be reached that way. The defenses of our mountain were rather formidable at this point, reminding me vividly of the dangerous northwestern face of Kangchenjunga. Our first dream was thus shattered, but at least it did not take much time to realize it.

Next on our program was a reconnaissance of the Khumbu Icefall, then a look at the Nepalese side of Lho La and perhaps the spur of Pumori, where I had taken my Everest Panorama in 1952. Senn and I left Dingboche with five Sherpas, spent one night at Lobuje, the next at Lake Camp, and arrived at the site of the Swiss Camp I on the third day, May 21. We were in no hurry to get there; the weather had been rather poor, and there was plenty of snow on the ground. A few hundred yards before reaching the old Swiss campsite we passed through the remains of the British Camp I, and found bits of tin, radio batteries, yellowish paper, and a few sticks of wood. The Swiss site hadn't changed much in these three years, and we pitched our tents near where our kitchen used to be. By now the clouds lifted, and the surrounding peaks glistened in snowy whiteness. There was our old enemy, the famous icefall, and we decided to have a look at it from a good vantage point. Ernst and I threaded our way through the ice labyrinth directly above camp and emerged one hour

later at the foot of the huge avalanche cone below Lho La. The avalanche debris did not look very fresh, and after a good look at the steep glacier hanging above us we decided to chance it and climbed up the steep slope. Ernst was in much better condition than I and arrived at the yellowish rock face above the avalanche cone long before me. When I reached him, I decided to call it a day and took some pictures of the icefall, while Ernst scrambled up the moderately difficult rocks to have a look at the route above. Soon he returned with the good news that there definitely was a route, though not without objective danger. The next day Ernst and Pemba Sundar (I did not consider my stage of acclimatization sufficient at the time to have a try at Lho La) were successful in making the first ascent, which had previously been tried by Eric Shipton and his men. There was one rope length of 5th grade rock climbing, and some fairly steep ice work above, not without a certain amount of avalanche danger. A route which is definitely not to be recommended as a safe one. The next day we took a good look at Pumori, but considered the objective dangers of the obvious route as too great. In one long day's march we returned to our headquarters at Dingboche, where Erwin greeted us with the good news that he had completed the photogrammetric reproduction of the entire Imja Khola Basin, during which time he made a second ascent of Island Peak, and first ascents of three other mountains over 19,000 feet.

Our next project was a trip to Nangpa La on the border of Nepal and Tibet. But before that we received truly "high" visitors: Lionel Terray and Guido Magnone, two of the world's great mountaineers. They had crossed three high cols from the Barun Valley to have a look at Solo Khumbu, and to return home via Kathmandu. According to them the ascent of Makalu had been disappointingly easy, and thanks to the abundance of oxygen equipment they still were in excellent shape. It was good to meet such wonderful people, and to be able to talk French again. Lionel and Guido spent the next five days with us as our honored guests, during which time we went to the lamasery at Thami, northwest of Namche Bazar, where we spent an entire day recording sound, and filming the famous Lama dances. It was fun working together, particularly so when I played back some of my tapes, and we became thoroughly carried away by the sombre Tibetan music, only to hear suddenly Lionel's high, excited voice yelling something in fast and uncomplimentary French whenever Guido, who was recording sound, failed to get out of Lionel's camera range. All too soon they had to leave us, traversing the high pass of Tesi Lapcha on their way to Kathmandu, while we went back to our "summer residence" in Dingboche. We couldn't help feeling just a little

envious, considering that they already had climbed their mountain and were on their way home, whereas we hadn't even begun our struggle, and the dreary monsoon months yet to come!

On June 8 we left Dingboche with eight Sherpas and eight coolies. That same day, as we camped at Khumjung, it began to rain, thus announcing the beginning of the monsoon. I might mention that our Sherpas always managed to persuade us to make a "short-cut" via Khumjung. Only much later did we find out that this is the origin of Solo Khumbu's prettiest Sherpanis! During the next few days, while we went up the valley of the Bhote Kosi, it rained every afternoon. We passed through Chule and Lunak over the old and much traveled caravan route toward Nangpa La (19,050 feet), the pass which the Sherpas once crossed when they migrated from Tibet to the region of Solo Khumbu. About 1,000 feet below the pass we put on our short summer skis, and at 10 A.M. on June 12 we crossed Nangpa La into Tibet, probably the first skiers across. Down the gentle slopes of the Kyetrak Glacier we had to push through the slushy snow every inch of the way. Soon we arrived at the site of Lambert's 1954 Base Camp and decided to camp at the identical spot. While I was busy working away at my Sherpa film, making good use of the passing caravans which carried salt and yak wool from Tibet to Nepal, Schneider worked with his photo-theodolite all around the northern and western approaches to Cho Oyu, while Senn climbed three peaks between 21,000 and 22,000 feet, two of them with his Sherpa Pemba Sundar. Toward the end of our stay north of the border Schneider and Senn climbed a 23,000-foot peak north of Cho Oyu, the greater part of it on skis. This also gave me the opportunity to get some good skiing movies, with the huge mass of Cho Oyu as an impressive background. For the Sherpas the whole aspect of skiing is utterly fascinating. Of course it looks very easy to them, but after we allowed them to try it themselves on the easy slopes of Nangpa La, they knew differently. Although they fell all over themselves every few feet, they had the time of their lives and nearly died laughing. On the way back to Dingboche it rained almost constantly; the monsoon had started in earnest. June 21 saw us back in our drafty and leaky stone hut, well satisfied with the results of our northern trip. I might add that we never did meet any Communist border guards, contrary to newspaper reports which claimed that the Chinese Communists had protested to the Government of Nepal about our alleged illegal entry. The fact of the matter is, that according to the Sherpas, the Tibetan border is actually one day's march north of where it is shown on the map, which would place our camp still within the border of Nepal. Only several

months later did I discover a partial explanation as to why there had been so many unfounded rumors and accusations spread about the 1955 I. H. E. in the press. The interested reader will find some amazing opinions expressed in Othmar Gurtner's foreword in the 1955 edition of *Mountain World,* devoted in a most thoughtful manner to our expedition.

We received another distinguished and welcome visitor in the shape of the New Zealander Norman Hardie, who together with Tony Streather had reached the summit of Kangchenjunga, as members of Dr. Charles Evans' Expedition. We tried to persuade Hardie to join us in our attempt on Lhotse, but his wife and one other New Zealand mountaineer were going to join him toward the end of the monsoon for some exploratory work south and east of the Kangtega group.

By July 23 we had moved to Lobuje. (There is a local superstition in Dingboche which does not allow strangers to stay more than two months, otherwise nothing would grow any longer.) The monsoon continued in all its dreary dampness, but at least once in a while the sun broke through, and the mountains lifted their snowy heads over the monsoon clouds. At Dingboche we had been just below them; at Lobuje we were "surrounded." The next few weeks were about as depressing and demoralizing as any I have ever lived through. Even Schneider was feeling mighty low, since there wasn't a thing he could do in the way of photogrammetry. I could at least do occasional work on some of my films, but we were all eager to get started in the Western Cwm. After a short stretch of fairly good weather around the middle of August, which gave us false hopes for an early end of the monsoon, the rains settled upon us again. Nevertheless, we kept moving equipment and provisions in relays to our future Base Camp, and on August 30 we moved up ourselves.

The next few days the weather was quite unpleasant; it snowed every night and part of the day, and the roar of avalanches filled the air. They came off the walls of Pumori, Lingtren, Lho La, and Nuptse, averaging one every three minutes. Sometimes one could count three or four at once.

On September 4 we made a first attempt to penetrate the icefall, but the snow was slushy and bottomless, forcing us to return to camp. The following morning I called my friends at 5 A.M. Pumori glistened in eerie moonlight. We followed the route which we had discovered previously, avoiding the maze of ice towers which lies between camp and the beginning of the icefall route close to the lower slopes of Lho La. Although it was quite cold, and the sun would not reach us for some time, the snow was already bottomless. At 10:15 we reached the first step of the icefall, close to where the Swiss had their Camp II in 1952. The heat was unbear-

able by then. I belayed Senn across a broad chasm, filled in part by huge blocks of ice. On the far side he had to wrestle with a short vertical ice wall, which he prepared with a piece of sling rope. After we ascertained that there were no insurmountable difficulties beyond, we started the descent. September 6 was a day of rest, and the following day we started again at 5 A.M.; this time we took 12 Sherpas with us who carried wooden bridges and aluminum ladders. At 7:30 we reached the site of former Camp II, and from then on the going was extremely tiring, but Senn did most of the hard work, breaking trail in fresh snow up to his armpits. Whenever we came to a crevasse which could not be traversed any other way, wooden bridges or ladders were laid across. As soon as the sun reached us, it became incredibly hot, sapping our strength. We continued our advance across countless giant chasms, between menacing séracs, over steep slopes covered with bottomless, slushy snow, getting ever closer to the famous "Valley of Silence," as the Swiss had called the Western Cwm. Just before we could enter it, a 100-foot wall of ice barred our way, but Schneider managed to discover a somewhat precarious traverse to the left through steep, unstable powder snow, followed by a final pitch up a narrow ice tower. The approximate site of the British Camp III was immediately beyond, and the bridge-laying Sherpa team arrived there shortly after us. Two tents were set up and some equipment placed inside; Camp I was thus established after only 14 hours of actual work in the icefall. There can be no doubt that the glacier was in much better condition than in 1953, when it took 11 days to cover the same distance.

The next few days were spent improving the route, laying additional bridges where needed, and carrying loads to Camp I. The weather was bad; it snowed every day, and the trail had to be remade again and again. On September 16 our second group arrived, having been delayed an entire week in Bombay. It was a great day for all of us, as we had looked forward to the arrival of our friends, and they were full of news from home. For the first time our team was complete. Our five new members seemed in good physical shape, although time for acclimatization was needed.

September 18 Spöhel and I went beyond Camp I, traversed along the lower edge of a huge crevasse to the left almost where the glacier meets the hanging ice from Everest's western shoulder, and discovered a narrow place where we could easily get across. The way to the Western Cwm lay open.

On September 22 Schneider and Spirig even managed to ski down the icefall, taking their skis off only twice for short stretches. Considering that Ang Tharkey once had told Tenzing that nobody would ever succeed in

carrying loads through that terrible mass of twisted ice, we were justly proud of our two skiers.

Our Camp II (*ca.* 21,500 feet) stood where the Swiss and British placed their Camp IV, and it again served as Advance Base. Even during the first week of October it snowed day and night, particularly at Camp I, where I held out for one week to supervise the "high-level ferry" from there to Advance Base. To keep the route above and below open took a lot out of everybody, and each morning our tracks were covered by one to two feet of fresh snow. That week George Bell came down with a case of laryngitis at Camp II, and Dr. Spirig urged me to send him down to Base Camp. Also Dick McGowan, who together with Dr. Spirig did a remarkable job of keeping the route between Base Camp and Camp I open, had some difficulty in getting used to the altitude. Schneider was eagerly awaiting the end of the monsoon to get started on his cartographic work, leaving only Senn, Spöhel, Beckey, and myself for the work above.

Camp III was established on the first terrace of the Lhotse Glacier, at almost 23,000 feet, between two huge crevasses, protected from any possible avalanche danger. A few days before, an avalanche had come down to the right of there, scattering our cache of tents and oxygen bottles without causing any damage. On the afternoon of October 7, Senn, Spöhel, and Pemba left camp to reconnoiter the route above, but half an hour later they were back. As they rounded the ice wall where the Lhotse Glacier borders the broad couloir (where our Sherpa Mingma Dorje was killed in 1952) a snow slab broke off a few feet above Senn, but he was able to jump onto safe ground. Spöhel managed to stay clear, and only Pemba was caught in the avalanche, but fortunately he was held by his two sahibs.

The following day Senn, Spöhel, and several Sherpas left Camp III. They were to try to establish Camp IV on the uppermost terrace of the Lhotse Glacier. At 4 P.M. the first Sherpas returned, obviously tired, but very happy with the route and ability of their sahibs. Ang Dawa brought me a message from Senn: "We reached Camp IV at 3 P.M.—without an ounce of oxygen. The route is good, particularly in the morning, when everything is frozen. I broke trail all the way, although Spöhel offered repeatedly to take his turn. The snow is partly powder and partly breakable crust, always up to the knees."

The next day I joined the others at Camp IV, which to my disappointment was not on the highest terrace of the Lhotse Glacier, but slightly above and to the left of the British Camp VII, at about 24,200 feet. It was very cold and windy that day and I used oxygen for the first time,

which enabled me to kick and cut steps at a good rate of speed, followed by the Sherpas carrying 35 pounds each. During my first night at over 24,000 feet I was agreeably surprised that I felt fine and did not have to use any sleeping oxygen. That evening was fairly calm; a clear star-filled sky stood over Everest, Lhotse, and their vassals.

October 10 was to be our first try for the summit: ". . . It is cold and windy, but clear. After having breakfast in my small tent, Senn, Spöhel and their Sherpas Pemba and Chowang (the latter carry three bottles of oxygen each, to be exchanged at the entrance to the Lhotse couloir) leave camp. They move slowly due to the poor snow conditions, and I take movies of them as well as I can in this cold and strong wind which numbs my fingers. At 9:30 A.M. I talk with Camp II over the walkie-talkie, where Beckey and Spirig are able to watch our summit team's progress through the binoculars. It soon becomes clear that progress is too slow to reach the summit today. At 2 P.M. they are back at Camp IV. Also the Sherpas moved very slowly; the maximum height reached was 25,500 feet. The main problems were the steep slopes of knee-deep powder-snow and breakable crust. There also was considerable danger from snow-slab avalanches. Unfortunately conditions are extremely wintry. Both climbers are in excellent condition. We'll have to place a fifth camp on top of the Lhotse Glacier. The distance from Camp IV to the summit and back is, under the present snow conditions, simply too much for one day . . ."

During the next four days we were imprisoned in our tents while a violent snowstorm raged day and night, threatening to disrupt our supply lines. On October 14 there was a slight improvement in the weather. Senn, Spöhel, and four Sherpas left to establish Camp V at about 25,200 feet. At 4:30 P.M. Senn told me over the radio that everything had gone according to plan. He was hoping for a calm day to try for the summit.

October 15: ". . . The night is moderately calm. At 9 A.M. I talk with Fred Beckey at Camp II, who again is observing the summit team's progress: 'Senn is ahead, 60 feet behind him, Spöhel, then the two Sherpas. Everything seems to be o. k.' " *10 A.M.:* "They have halted just above the yellow band, as if they were looking for something." *11 A.M.:* "Only one of them continues climbing, the other three are still at the same spot." *12 Noon:* "Senn is still climbing, but slowly. The others are coming down."

"Toward 2 P.M. two men are approaching Camp IV from above. They are Spöhel and Chowang. I have prepared hot lemonade for both. Soon I hear the sad story: At first progress was good, although the night before the two sahibs had been unable to enjoy any sleep in their narrow summit tent. Despite the intense cold they got started at 7:30 A.M.; the Sherpas

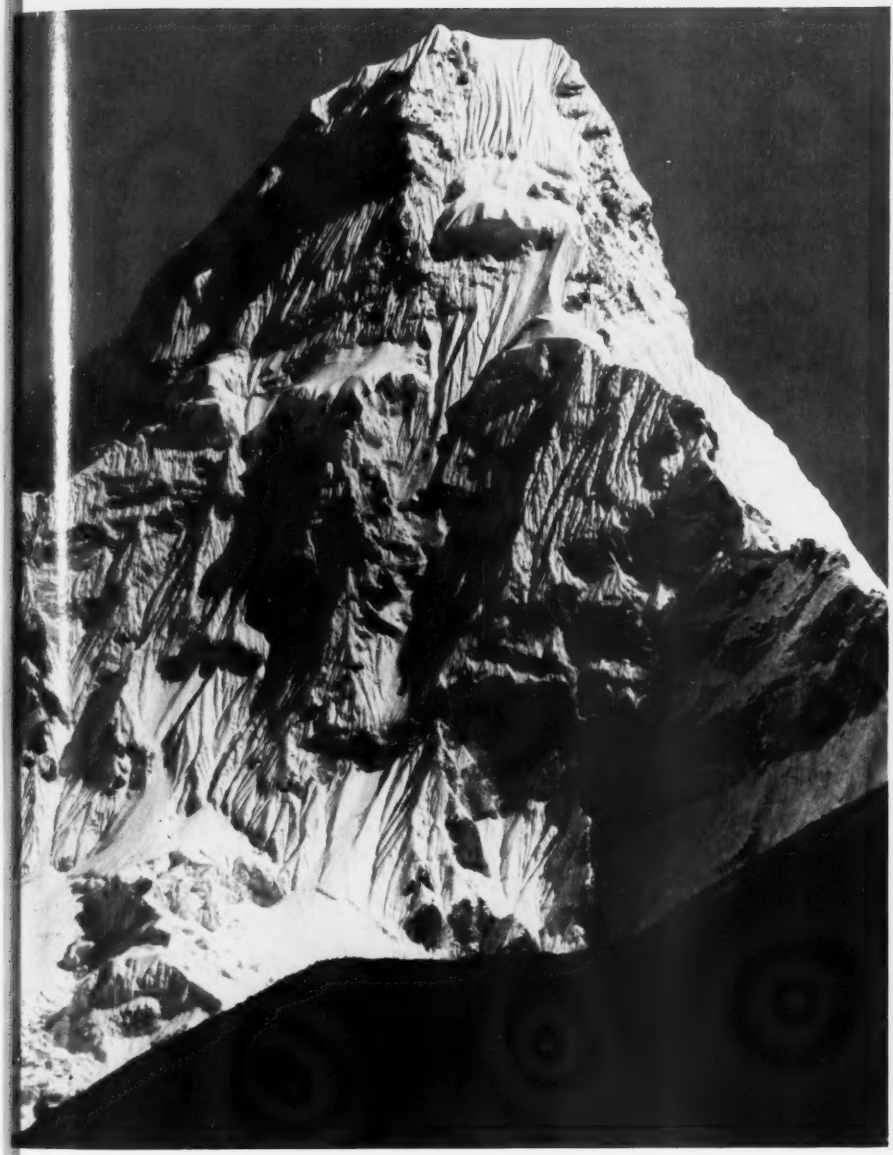
climbed very well. Beyond the yellow band they looked for the eight oxygen bottles which had been deposited there on their first attempt on October 10, but due to the violent storms of the past four days not a trace of them could be found. But Senn could not bear the thought of having to give up again, and he decided to make a try for it alone! Spöhel gave him his remaining unused oxygen bottle, raising Senn's total to three. But the snow conditions were terribly bad, and his own physical condition had suffered from the hardships of the past several days. Just before reaching the great couloir, at an approximate height of 26,600 feet, his oxygen set failed completely, giving him the feeling of suffocation. He had to pull off his mask in order to get enough air, but by then he was thoroughly exhausted and had to give up. (All this I found out later via radio.) Senn wants to remain at Camp V, ready for a third summit try. Also Spöhel declares himself ready and able, but as the one with the responsibility I must ask myself whether those two still possess the necessary reserves after all this time? Should I pull the first team out and move up the second? I too am beginning to feel the physical deterioration, and several of our Sherpas are sick and must be sent down to recuperate at Advance Base at least. Before we can even think of a third attempt, fresh supplies of oxygen, food and fuel must be brought up . . ."

The following days were terrible. During the night of October 16 the storm rose to new heights. It was a miracle that the tents were still standing. By then the Sherpa tent at Camp IV was half torn. The contact with Camp V was interrupted, and Senn was running out of supplies. Also Spöhel and I had little left. What had happened to the weeks of good weather which usually follow the monsoon? One stormy night followed another, and the days were no better. On the 18th I succeeded in persuading our four Sherpas to carry oxygen and supplies to Camp V, but while they were getting ready to leave, the storm rose to such violent strength that I had to tell them to get back in their tent. Another day passed, and another night straight out of Dante's Inferno. We were seriously short of supplies. In the early morning hours I made up my mind to go down to Camp II, before losing my sanity in this constant rattling of the tent, and the wild howling of the storm. Also Senn and Spöhel would have to go down. We had reached the limits of human endurance.

October 19: ". . . Over the radio Spirig tells me that three Sherpas are on their way to relieve our acute food and fuel problem. Although the storm continues unabated, Spöhel and seven Sherpas get ready to carry oxygen, a two-man tent and other equipment to Camp V. Nobody is particularly eager to go, but it'll have to be done. Around 1 P.M. I hear the

crunching of crampons outside my tent. It is Ernst, who after five lonely, storm-swept nights at Camp V has at last come down. I immediately open my tent and pull him inside. He is utterly spent, both physically and mentally. Not many could have stood it that long up there! Now my tent, though shaken by the storm and hardly a place of comfort, means security to him, another human being, a friend, with whom he can talk. Suddenly even he, the man of iron, has tears in his eyes, tears of emotion and sudden relaxation. Quickly I prepare hot lemonade for him, and gradually he recovers and starts talking: After four lonely nights at Camp V he tried to fight his way down to us, but the hurricane-like storm made it impossible for him to even leave his tent. This morning the storm tore open one side of it, leaving him no choice. In this terrible situation he had to gather his things together, fasten his crampons and battle his way through the raging elements. Once a sudden gust of wind swept him off his feet and deposited him about 50 feet further down the slope, shaken but unharmed! Later that afternoon Spöhel and the Sherpas return, having taken their loads to Camp V. We three huddle together in my small tent in the gathering darkness; the storm is increasing; the snow is beating against the thin walls of our home in this white hell. Tomorrow we will make an attempt at retreat. . . ."

October 20: ". . . The night was frightful. Toward noon we are ready to leave. It takes a long time to gather everything together in that small space, which the heavy snowdrifts have left inside the tents. The crampons are fastened, we rope up, one last look at our deserted tents, and the retreat begins. Vision is nil, and the route is hard to find. The storm threatens to throw us off. Every few yards we wait for the Sherpas, getting chilled to the bone. Suddenly Chotari, who is in the middle of the Sherpa rope, falls headfirst and shoots down the steep slope. Chowang who goes last is pulled out of his steps and hurtles after Chotari. Fortunately Phu Dorje immediately jams his ice-axe in the snow and quickly wraps the rope around it. The pull of the two bodies hits him, but he can take it. A good man! Spöhel and I rush across to Chotari who lies face down and moans softly, completely buried under his huge load. Together we manage to set him on his feet again. It takes him a while to get over the shock. Also Chowang is unharmed. We discuss our situation: The security of Camp II would be heaven indeed, but the danger from avalanches, were we to continue our descent, is far too great. Up we go, despite storm, heavy rucksacks and the sullen resistance of the Sherpas. Back at Camp IV I am barely able to take off my crampons. Our situation is very serious, but in our tents we feel comparatively safe. . . ."



AMA DABLAM (22,800 feet), SOUTHWEST FACE. Telephoto by Erwin Schneider

Lhotse, 1955

TWELVE PHOTOGRAPHS
BY MEMBERS OF THE EXPEDITION

TAWECHE (21,000 FEET) AND CHOLATSE (21,000 FEET) from above Dingboche

TAWECHE (21,000 FEET) AND CHOLATSE (21,000 FEET) from above Dingboche

CHORTEN AT THANGBOCHE, with Kangtega in background. By Norman Dyhrenfurth

Pasang Phutar II of Namchi Bazar, Sirdar. By Norman Dyhrenfurth

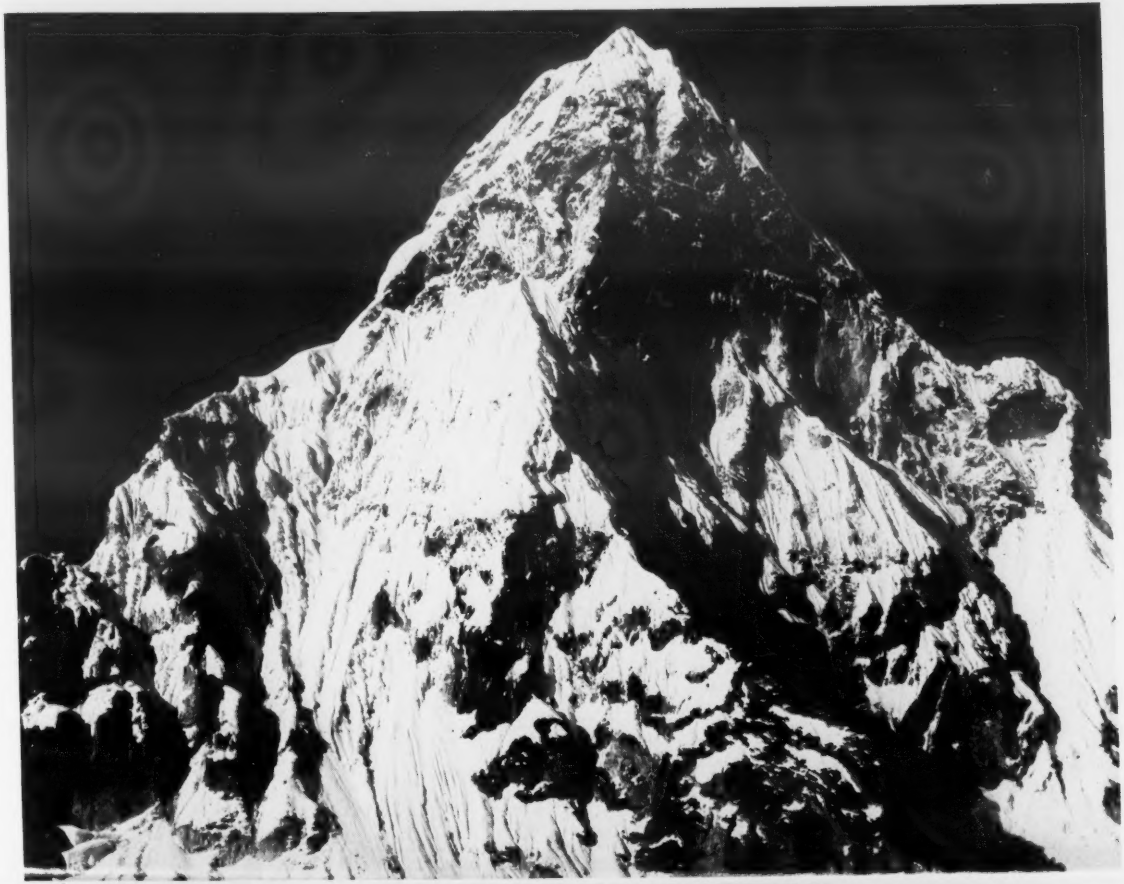
MEMBERS OF THE INTERNATIONAL HIMALAYAN EXPEDITION

Rear Row

Richard McGowan, Ernst Senn, Erwin Schneider

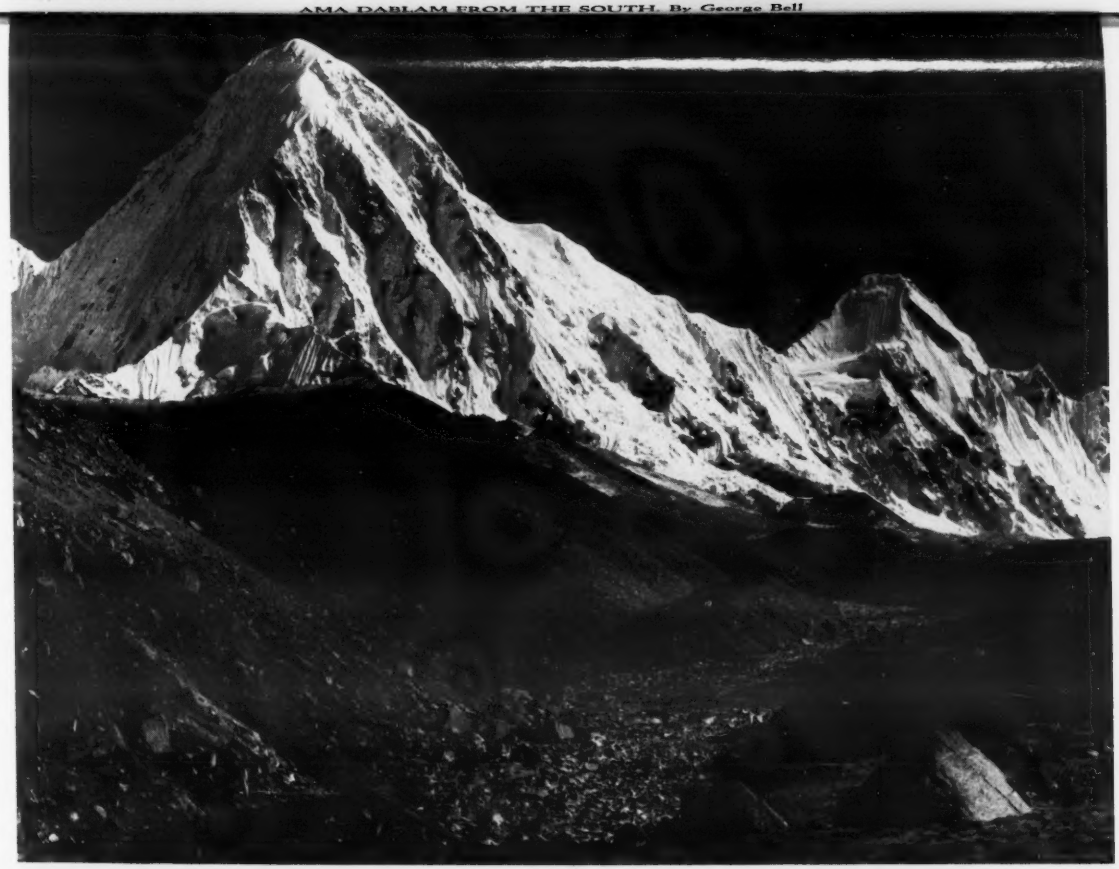
Front Row

Arthur Spöhel, Bruno Spirig, George Bell, Norman Dyhrenfurth
Gaya Nanda Vaidya (Nepalese Liaison Officer), Fred Beckey



AMA DABLAM FROM THE SOUTH. By George Bell

AMA DABLAM FROM THE SOUTH. By George Ball



FROM MONSOON CAMP AT LOBUJE. Pumori (23,000 feet); Lingtren II on right. By Norman Dyhrenfurth

LHOTSE FROM ADVANCED BASE CAMP IN THE WESTERN CWM.

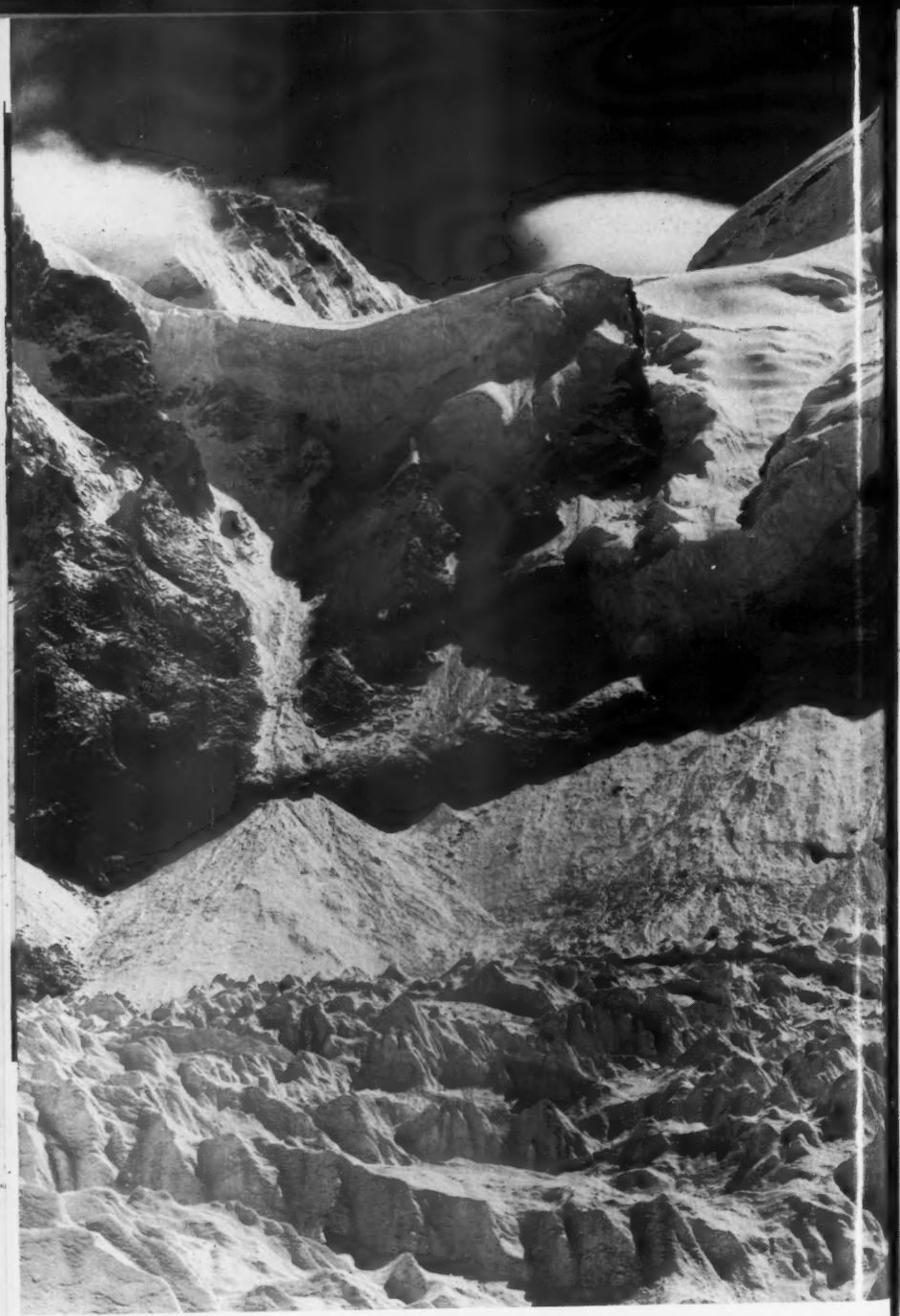
Route leads to the couloir below summit. Camps III, IV, and V are in the icefall, to right of center. By George Bell

THE SOUTH FACE OF LHOTSE. Gendarme ridge on left; Lhotse I in middle; Lhotse II on right. Telephoto by Erwin Schneider

CAMP III, 23,000 FEET

Looking toward Everest. By Norman Dyhrenfurth

SPIRIG AT ADVANCED BASE CAMP, 21,500 FEET.
Lhotse in background. By George Bell



LO LHA. Climbed by party in May, 1955. By Norman Dyhrenfurth

The following day we did succeed in reaching the safety of Advance Base, groggy from fatigue, but grateful to be alive. At Camp III we had met Beckey and Spirig, who were scheduled to move up to IV that day, but had decided to wait another 24 hours. Not one of the Sherpas there was willing to accompany them, but when I asked for volunteers, heroic Chowang, who had just come down with us, and brave Pemba Sundar, whom we had to send down with a severe case of laryngitis a few days ago, both agreed to move up to Camp V and to carry oxygen to the Lhotse couloir. They don't come any better!

On October 22 Beckey, Spirig, and five Sherpas went up to Camp V, on one of the few almost windless days. What a day for the summit! Three Sherpas went back to Camp III that same afternoon. The following day I looked up early at the Lhotse Face, but nothing moved at all; only huge billows of snow blowing across the face. Beckey told me that the night had been very bad, and that there could be no thought of trying the summit that day. They were willing to spend another night there, hoping for the wind to die down. In the meantime George Bell, who had recovered from his laryngitis, and Dick McGowan went up to Camp IV with Lakpa Sona and Kancha to act as support for the others and to take over as third summit team if necessary.

October 24: ". . . Again I talk to Beckey at 9 A.M. The storm is of such violence that neither he nor Spirig could sleep at all. They are demoralized and exhausted, and Spirig does not believe it possible to change oxygen bottles in this cold. With the sets we were forced to use, one can only get one and one-half hours of oxygen per bottle, which means only four and one-half hours for each three-bottle set. The decision is hard to make, but I must tell them to give up the Lhotse Face and evacuate all camps.

"Shortly before 1 P.M. I notice eight men on their way down, four from Camp V, and another four from Camp IV, but all tents are still up! Suddenly one of the black dots below Camp V is missing. One of the remaining three is rapidly moving down the slope to catch up with the other two, obviously Pemba and Chowang. They deposit their loads below Camp IV and hurry back up, followed slowly by the sahib who appears to be very tired. Halfway between IV and V the missing fourth reappears and is brought down by the two Sherpas. At Camp IV the obviously wounded or exhausted man is placed inside my old tent. What on earth could have happened? What amazes and worries us most of all is the fact that the other sahib and the two Sherpas leave the sick man alone up there and move down to Camp III. We are greatly concerned, unable to find a likely explanation.

"Later that afternoon Bell and McGowan arrive here with their Sherpas. One bad night at Camp IV had taken its toll; they seem quite exhausted. Early that morning the Sherpa tent was ripped wide open, and poor Kancha and Lapka Sona were buried under a huge snow drift. George and Dick tried to persuade them to follow them up to Camp V to help with the evacuation, but they refused to go anywhere but down. At last I get Beckey over the radio at Camp III. He reports that Spirig had a complete collapse, combined with snow blindness, which convinced Beckey of the need for help from the two Sherpas. I reproach him for having left Spirig all alone up there, without sleeping-bags or air mattress! None of us can understand this. Now it is too late to attempt a rescue today. Senn and I decide to leave from here as early as possible tomorrow to get Spirig down, if he is still alive by then. We spend a worried and sleepless night. . . .

"The morning we take all available Sherpas with us. By 8:30 A.M. we are at Camp III. Senn and some Sherpas start up the Lhotse Face; I follow with Ang Dawa and Beckey. All oxygen sets are at Camp V; we have to do without them. The storm rages with unabated fury, but the sense of emergency gives us strength, and we reach Camp IV in one and one-half hours. Senn did it in one hour and 10 minutes! The camp presents a desolate picture, torn tents half buried under huge snow drifts, but what is most important: Through the howling of the wind I hear Bruno's voice answering my call. Ernst is inside his tent. Bruno can hardly see; he has bandaged his eyes; he has lived through a terribly cold and lonely night, but thank God there seem to be no serious after-effects! As quickly as possible we prepare for the descent; everything that can be salvaged is distributed among the Sherpas. Beckey goes ahead, leading Spirig over the steep stretches. Senn follows immediately behind, holding back on very short rope, and I follow as anchor man. After a very slow descent with many stops to give Bruno a chance to rest, we reach the safety of Camp III. Here we fashion a toboggan out of a pair of skis, and with the help of the Sherpas we get the sick man to Camp II before darkness. It was a hard day, but everything turned out well. The Lhotse Face is evacuated, although much valuable equipment had to be abandoned at Camp V. But what do we care at this point? Everybody is safe and more or less sound at Advance Base! . . ."

By October 27 we were all back at Base Camp. The icefall had changed tremendously during the past weeks, but the evacuation of the Cwm could be effected without any difficulties. Of course we were terribly disappointed about our failure on Lhotse, but the relief of having escaped the onslaught

of winter without any losses almost made us forget our sadness. Life was again good to us, and we were filled with gratitude.

On the 29th, Senn, Spöhel, two Sherpas, and I went up to 20,800 feet on Pumori's southeast spur, somewhat higher than in 1952, to repeat the panorama which I had taken then. After four hours of intensive work with several cameras, exhilarated by the greatest mountain view in the world, we hurried back to camp, where our Sirdar Pasang Phutar had arrived with 50 porters from Namche.

". . . Our last evening at Base Camp, at the foot of the icefall. The sun has set some time ago; I am sitting on a rock above camp, lonely in the gathering darkness. The last light slowly fades from the surrounding peaks. I am torn between two emotions: happy to be returning home, and at the same time sad and nostalgic. Hard weeks and months lie behind us, and yet the parting from these great mountains weighs heavily . . ."

Early the next morning we left Base Camp. We enjoyed one last look toward the Cwm, where the snow was blowing from the high ridges, and the howling of the storm could be heard in the dark rocks of Everest's summit pyramid. An unfriendly world at this time of the year. It was high time that we escaped. The walk to Phalong Karpo was pure joy. It was a pleasure to walk on soft moss again, and to see flowers! The trail led past the lovely yak pastures of Lobuje and Tukla, where we had spent so many dreary monsoon weeks. Old familiar friends like Cholatse, Taweche, Ama Dablam, Kangtega and other proud summits greeted us, bathed in the golden light of a Himalayan sunset. We wandered through this mountaineer's paradise like children, infinitely happy, content to return to the warmth of life. My heart was full, the disappointment behind me. After one last look toward Khumba Glacier, we walked down to the Chola Khola. Soon we reached the stone huts of Phalong Karpo. A beautiful camp site, good supper, and dreamless sleep. Up there in the Lhotse Face I didn't think it possible that Life would ever again have so much to offer.

Early the next afternoon our caravan reached Thangboche, "the most beautiful place on earth," as Sir John Hunt once called it. Here I spent the next 10 days completing my film about the life of the Lamas, while some of my friends accomplished some first ascents. Schneider and Senn went ahead to Those, where they worked on an important map for the Government of Nepal.

On November 14 we left Namche Bazar and arrived in Kathmandu on the 26th. While the others made good use of their time by visiting all the places of interest, I had to spend several days inside various offices, to prepare myself and our baggage for the coming battles with the Bombay

Customs. To my great joy I found the utmost understanding and helpfulness among the Government officials of Nepal. We left this hospitable country on December 2, and by the 8th all the members of the I. H. E. had left India for their respective homes.

At the end of such an expedition one is bound to ask oneself: Was it worth it? Must it be called a failure, since we did not reach the summit of Lhotse? I don't think so. The ascent of Lhotse was not our only goal: the mapping, photography, and documentary films were of no lesser importance—entirely apart from the considerable number of previously unscaled peaks that were climbed. A summary of our results follows:

1. Cartography: Photogrammetric map of entire Mount Everest region, extending as far as Cho Oyu in the northwest. Scale: 1:50,000. Also a map of the iron ore center around Those.

2. Photography: Close to 10,000 still pictures in color and black and white, ranging in sizes from 24x36mm to 13x18cm. This time not only the mountains were photographed, but extensively the populace of Solo Khumbu, its customs, and life in the lamaseries.

3. Documentary Films: 28,000 feet of Commercial Kodachrome was exposed, and sound recordings made on magnetic tape. This material covers the following subjects: "Life of a Sherpa"; "The Lamas of the Thangboche"; "The Sherpa Dance"; "Namche Bazar, Home of the Sherpas"; "Monsoon in Solo Khumbu"; "Lama Dances at Thami"; "The Battle for Lhotse."

From a mountaineer's point of view we all agree that the Fall is out of the question for the "biggest" Eight-Thousanders. The extremely strong French team of the 1954 Fall expedition had to give up at an altitude of 25,600 feet on Makalu, whereas the same team encountered little difficulty in the following Spring. Lhotse is undoubtedly one of the most difficult great peaks, but a strong team with previous Himalayan experience and first-class oxygen equipment should be successful.

Summary of Statistics

ATTEMPTED: Lhotse, 27,890 feet. Height reached: 26,600 feet.

ASCENTS: 31 summits between 19,000 and 23,000 feet; mostly first ascents.

PERSONNEL: Leader, Norman G. Dyhrenfurth; Fred Beckey, George I Bell, Richard McGowan, Erwin Schneider, Ernst Senn, Bruno Spirig, and Arthur Spöhel.

Solo Khumbu Climbs: First Ascents After Lhotse

FRED BECKEY

ENCOURAGED by the magically clear skies of the Solo Khumbu autumn, George Bell, Dick McGowan, and I planned a few climbs before the return march from Thangboche. Accordingly, we left Base Camp October 29 with four Sherpas heading for Lobuje, from there to attempt the significant peak to the southwest. Lacking information on any other name we simply called it "Lobuje Peak." From grassy alps alongside the lower Khumbu Glacier, Lobuje Peak sweeps up into a rocky crest crowned with an icy cap giving rise to considerable fluted hanging ice. There was a route, we judged, via these hanging ice aprons on the south face.

From our tent pitched alongside a scenic pond, we climbed up moraine and glacial slopes to a col south of the upper slopes. The way was defined: up an easy, rounded ice shoulder; then the 1,500-foot crevassed hanging apron; finally a corniced summit ridge. Twice, little ice walls provided a chopping problem. The other difficulty came after 4 P.M. as we mounted the highest ice gendarme on the ridge. Here we saw a deep chasm cutting us off from the slightly higher final summit. Arriving darkness counseled a retreat. We had reached the west summit, well over 20,000 feet, and had obtained a supreme view of Everest-land from a new vista. Later, while belaying down the ice, the splendid peaks of Taweche and Cholatse brilliantly reflected the moonlight.

Several days later we found ourselves encamped on the highest yak pasture beneath the resplendent and inspiring Ama Dablam, enshrined as "impossible" by the British. Such a maxim, I think, could generally be supplanted with "improbable" by the modern extremist cult. Any serious intentions we had for the summit were negated by lack of enthusiasm due to the advisability of a stronger party and the fact the Sherpas had forgotten the pitons at Base Camp. Difficult, it appears, but perhaps the nearby Hongu Twins are even less attainable. With Sherpas Da Tensing and Chotari, I climbed up new ground to over 20,000 feet on the southeast ridge of the "Himalayan Matterhorn." Here the Sherpas were not overly pleased with the prospect of crossing a steep névé profile, so I climbed on alone for several hours. I learned a number of things about the peak and was able to assess its problems carefully. Halting at a vertical

chimney I fully realized it was time for more security. Through the binoculars I could see Bell and McGowan reaching a snow pass west of the Mera Col.

On November 5 we returned to the body of the expedition, encamped at the ever-lovely sanctuary of Thangboche. Of the unclimbed summits over 21,000 feet in the Solo Khumbu, none seemed a better target than a glistening white spire west of the upper Dudh Kosi. Known in native tongue as Langcha, its beautifully symmetrical peak made an artistic photo through the pines and birches beside the monastery. Not only was it an alluring summit, but through the glasses, it appeared possible, a forecast not applicable to many of the peaks visible without adding "with several days of extreme climbing."

After wading the Dudh Kosi on November 7, we unexpectedly came upon a quaint yak village, typical with its rings of stone wall. Above loomed the spear of Langcha, the shining monarch of the valley. The Sherpas elected to camp here, but first toted our packs to the highest heather, perhaps 18,000 feet. It was only 3 P.M., but we were already in the shade of the mountain fortress fencing the glaciers.

A 5:30 A.M. start was in order. After climbing a monotonous talus moraine, we stepped out onto the sunshine of the glacier cascading past the west face of the peak. Though it was considerably crevassed, connecting links conveniently appeared when most needed. At 9 A.M. we were ready for the final thrust. On a broad face of mixed steep rock and ice, which we estimated rose 1,500 feet, there were three opportunities. All began as couloirs, with higher ice patches, which threaded up to merge near the summit. The couloir to the right appeared adequate but for a slabby rock wall which sheared off its base; this we dismissed for lack of pitons.

Bell led off up the center gully. Above a schrund, crampons bit well into a firm crust, allowing us to climb simultaneously. After an hour the couloir bulged and rose to 60 degrees. The slope, almost water-ice, clearly required steps to be cut. Crouching next to a rock protrusion I squinted as the showers of chopping fragments bounced off my tropical helmet and tinkled down the abyss of the couloir. The ones that missed me hummed, by the time Bell was two rope lengths above my position. Eventually the angle lessened, but steps were still advisable, especially for the descent.

Hours later I cut a zigzag line in the upper couloir and up a steepening veneer of ice that curved up to a ridge on the left. The crest never gave the security for combination climbing, as we had hoped, but did mitigate "exposure nerves" temporarily. It brought us to an airy point, then led

around a granite pinnacle, whose lowest ledge we crossed on our knees. We were behind schedule; the corniced arête leading to the summit promised no respite. From below we had been lured into believing it would be a quick "walk," but it proved much too precarious and exposed for that. In addition, the crest turned into a consistency of mixed powder snow and corn flakes. Bell, whose belaying axe was milling about in this mixture, loudly reminded McGowan, "Remember, if anything happens you've got to jump over the north side of the ridge." Looking ahead at the unstable cornices I added the rejoinder, "Don't forget." It was no place to linger.

By chopping and kicking immense steps, and on the steepest portion cutting body room, I built the route as near to the margin of safety as time would permit. Once a crevasse offered a secure anchor spot; later I carved deep niches in the crest. We were gracefully spared the annoyance of any "cave ins" and stepped onto the summit mound at 4 P.M. Cameras clicked off a round of panoramas from Gaurisankar to Makalu. The rays of slanting sunshine danced off Everest and Lhotse, where a lee cloud betrayed the high north wind. Luckily, it was relatively calm here. It seemed as if we were in the midst of the world's most magnificent group of mountains. In a reverie of route study, I was in no mood to disagree, for from our vista there was probably the most concentrated assembly of severely difficult peaks on the globe. Far behind the wild peaks of the upper Bhote Kosi, Cho Oyo, Gyachung Kang, and the Nup La, we caught glimpses of the expanse of forbidden Tibet. We almost overlooked seeing two beautiful lakes at the foot of our north face, just adjacent to the Ngojumba Glacier moraine. At one shore we could faintly discern a yak enclosure. The descent went better than expected. Loose steps had crusted in the shade and at times we could simultaneously back down our ladder of carvings. Only Bell had cause to gasp when a camera strap broke and the apparatus swiftly clattered into oblivion. But our verbal regrets were swiftly stilled by his cheerful announcement, "It's insured anyhow." When enveloped in complete darkness, we made several rappels from wooden pickets, then slowly cramponed down over the schrund. Little ice hummocks on the glacier began to throw us. Once I felt my feet in mid-air, let out a horrifying shriek, but landed without tumbling after a one-foot free fall. These affronts to our eyesight ended about 8 P.M., and it remained only to stumble down the moraine rocks to camp. Our thirst for tea did not quench until 1 A.M. that night.

The expedition moved to Namche, but continuing had to be delayed until the mail runners arrived with funds. I decided to leave early, make

some exploratory side trips in territory unvisited by sahibs, then catch the others on the trail to Kathmandu.

Kangtega had long denied us the answer to the question, "Is there a route on the other side?", as we were not attracted to the steep walls above Thangboche. With Sherpa Nima Tensing and two Gurkha coolies I set off on November 12 for the unknown valley leading west into the Dudh Kosi between Namche and Ghat. At a village by the river a little girl ran up and gave me three turnips, or "mula." Surprises such as these make one delight in these mountain people.

We camped in the last spruce clump higher than Namche, whose hemicycle of houses could be seen behind a ridge. In the morning we continued on what is supposed to be a yak trail, but which would have considerably slowed a mountain goat. It crossed numerous rock ravines, wound sinuously around cliffs, and once passed behind a small waterfall! Behind a ridge of Tamserku, the valley tended to flatten into a beautiful grassy meadowland. As we walked along the grass strip beside the glacier, the headwall of the Kangtega peaks came into full view. This is perhaps the most magnificent enclosure I have seen. Behind the browning grass and fringe of cliffs the shining ruin of Kangtega's main icefall hung like a panel on the great wall of rock and ice. I marked a good camp spot on the bed of a dried pond, and then climbed to the foot of the hanging glacier. The tragedy of it all was that there was a route; not easy, but hopeful. However, it would require an appalling risk. I was tempted to try it with Nima, but one more look with the glasses convinced me. Virtually the entire route was subject to falling ice at any moment, and though I saw nothing tumble, there were many piles of chaotic rubble as reminders. Possibly an approach from the upper Hongu might solve the problem of Kangtega. Tamserku's only apparent hope were the ridges, which were about as wild and corniced as any Himalayan nightmare could conjure.

The next morning Nima and I set off for the last alpine peak on the south side of the valley. One might call it the fourth peak of Kangtega. About 20,500 feet, it was the only summit that reasonably promised success. At first we were almost discouraged by the tedious crossing of the debris on the glacier. Later, an almost endless grass slope terminated in a talus shoulder. Apparently a grip of new frozen snow held the boulders together. Some scrambling on stratified rock took us to steep snow slopes leading to the summit. Being on the north side, the surface was loose. We needed no crampons, but had to kick deep steps. Having a cold, I was happy to see Nima volunteer to share this task with me. A few little rock walls added variety to the delicate snow pitches. At 1 P.M. we were vic-

tors, admiring wonderful views, and concentrating attention on Numbur, across the deep valley of the Dudh Kosi. Afternoon clouds rolled in; there was little else to do in this belvedere, so the next day we made the intricate descent to Ghat. Villagers told us the expedition had passed the day before. "Why not explore Numbur and the Lumding Valley behind Kwangde," I thought, "and then follow the expedition by cutting across high ridges to the main trail at Junbesi?" One of the coolies said the trail was rough, but he was familiar with it. We added a little local food and started.

The first evening found us encamped under a rock in a magnolia forest. The clouds had come in; by supper time it was snowing lightly. In the morning the trees were rimed with frost feathers and the trail slippery with snow. In a thick mist we crossed a very high ridge col where rock steps had been built into a steep gully. When we had set up our tent in the flattish Lumding Valley, I was ready to call off the venture towards Kwangde, but at night the clouds parted. Under a star-studded sky Nima and I set off up the valley at 5:30 A. M. In an hour I was surprised to see the huts of a yak farm. It was unoccupied now, but the secluded valley obviously had excellent feed. Nima spoke of "big pani" farther up the valley, past a long waterfall. I looked expectantly for this lake, but arriving at the foot of the glacier was surprised to see its size. Covered with a layer of ice, it filled the valley bottom and was only impounded on the brink of cliffs by a little moraine. I surveyed the wild ice walls from Numbur to the ring of Kwangde peaks. It was truly a climbing paradise, but we were limited by time to confine ourselves to one of the lesser summits, just over 19,000 feet. Enroute to the upper glacier we climbed over a grassy hillock to find ourselves suddenly at the shore of a hidden lake of the most magnificent turquoise color imaginable. We both shouted with delight at the thrill of discovering this alpine "blue jewel." The near shore was banked with green grasses, and at the head of the lake was an ice cliff. Above it in contrasting white, rose the pointed ice peak of Kwangde III.

The wind played havoc with us that day. At times it almost blew us over, causing Nima to remark "Lhotse same, sahib." Most of the high summits were plumed, and during our climb we could see a mass of white trailing off the Everest group. Our alpine holiday had to end; the next day found us battling a cliffy trail which climbed a long mountainside of magnolia brush and juniper jungle. After crossing a rocky col at about 17,000 feet, we lost the last vestige of the trail. After several time-consuming skirmishes with cliffs and false passes Nima shouted to come up to a grassy crag he had scaled. A solitary cairn gave new hope, and indeed we climbed through the last col to see the yak trail in the next valley.

High ridges skirting Numbur took us westward. Beyond a battery of prayer flags and chortens at the last high pass we descended a magnificent coniferous forest to the beautiful valley setting of Junbesi. We were now three days behind the expedition, so walked a bit faster and longer each day than most trail tourists. Tangerines and colorful festivals slowed us a few times. Once we varied our simple potato, rice, and chicken diet by purchasing some fresh water buffalo cuts. Crossing one of our last high ridges there was a wonderful view above the cloudy valley depths: Annapurna was dimly visible; nearer rose Himal Chuli, Manaslu, the Ganesh Himal, the Langtang and Jugal Himal. Only on the flight from Kathmandu were these icy giants seen again. That evening we reached Dyhrenfurth and the expedition's camp. Norman cheerfully announced news I was most pleased to hear, "Jeeps will meet us at Banepa, only two hours from here." A bath and good hotel food wasn't far away. The Nepal Himalaya almost seemed distant now, but as I told Nima, "I'll try to come back in a few years, mountains good."

Summary of Statistics

ASCENTS: "Lobuje Peak," West Summit, October 30, 1955; Fred Beckey, George Bell, and Richard McGowan.

Langcha, November 8, 1955; Fred Beckey, George Bell, Richard McGowan.

Fourth Peak of Kangtega, November 14, 1955, Fred Beckey, Sherpa Nima Tensing.

PERSONNEL: Fred Beckey, George Bell, and Richard McGowan.

Nevado Pucahirca

HARVEY N. PLATTS

THE Cordillera Blanca of Peru was the objective of our expedition in the summer of 1955. This great range, lying almost on the equator, contains the highest mountains in the world in the tropical zone. It is difficult to describe the beauty and charm of these peaks situated in a land rich in history and a blending of Spanish and Incan cultures. The mountains rise directly from their base, at an altitude of 7,000 to 9,000 feet in the picturesque Santa Valley, to steep ice-covered summits reaching 22,200 feet. Long canyons or quebradas extend into the range where the climber can walk in the lush mountain grass at 12,000 to 14,000 feet and gaze up at the white peaks towering 6,000 to 10,000 feet above the floor of the quebrada. This area has seen extensive mountaineering activity, yet at this writing there still remain untrod summits of over 20,000 feet. These were our goal.

Our expedition had its beginning in the fall of 1954 when David Gagliardo, after two and a half years in South America, returned to the United States determined to make an old dream of an expedition to the "Glorious Cordillera" become a reality. By November preparations were well underway in Boulder, Colorado, with the following men already members of the expedition: Dr. Raymond Hopponen (who as a professor of pharmacy was our medical officer), Dr. William McMannis, Dr. Harold Walton, and the author. In this formative stage we were very fortunate to have the advice and encouragement of many others and especially David Michael who had been a member of two previous Andean expeditions. At this time we also received essential help in Lima from the U. S. Embassy. Dr. Arthur Campa, the Cultural Attaché, was particularly helpful. Nick Clinch, Andrew J. Kauffman II, and David A. Sowles joined the expedition just before our 3,000 pounds of equipment and supplies were packed and shipped from Boulder for the port of Callao, Peru.

Gagliardo, Hopponen, and McMannis left the United States by air on June 13 as an advance party. By June 19 they had accomplished the trying and frustrating task of getting our equipment through Peruvian customs, purchasing additional supplies, making reservations for the main party, handling a hundred last minute details, and finally, in one continuous 28-

hour ride, trucking everything up to Caras (7,251 feet) in the Santa Valley.

The rest of us flew into Lima one week later and found everything well arranged by the advance party and Braniff Airways. We were able to go directly by car from Lima to Caras, where, on the night of June 23 our entire expedition was assembled for the first time. We were fortunate to have as porters the three Angeles brothers, Emilio as head porter, Eugenio, and Victorino; together with Juan Ramirez, who acted both as porter and interpreter. We found all four men very willing and of good spirit, and the Angeles brothers were particularly competent porters on the mountain. These three have learned a lot from previous expeditions, and this combined with their natural endurance and strength has produced very good men whom we wholeheartedly recommend to future expeditions.

We had waited until arriving in the Santa Valley to select our objectives and there decided to climb in the Nevado Pucahirca area. This is actually a small range in itself, containing at least four separate and distinct summits close to or above 20,000 feet and running roughly north and south. The southernmost was climbed in the thirties by Erwin Schneider. Also part of the group is the beautiful and as yet unclimbed Taulliraju (19,128 feet) located to the south across the great ice field that lies at the foot of the Pucahirca peaks. Schneider made his ascent of the south peak from the Jancapampa Valley on the east and indicated that the other peaks should be accessible from the Jancapampa. Aside from this, we had almost no information on the peaks and the only picture we had seen was in Kinzl and Schneider's book *Cordillera Blanca.* Although only a distant view from the west of the top 2,000 feet, the picture did show that if, from the east, we could reach either of the high cols between the northern peaks, the summits on either side of the col would go. We could tell from the map that these peaks were some of the most inaccessible of the Cordillera and we knew that being the easternmost of the range they would be the first to be covered by the clouds and storms that move in on the prevailing winds from the Amazon basin. We also expected and found a slightly lower ice line than on the western side.

In Caras that evening we decided to send a reconnaissance party by way of Quebrada Santa Cruz to find and mark a route to Quebrada Jancapampa, reconnoiter the peaks and select a site for base camp. The main group would follow a few days later from Yungay up Quebrada Yanga-

nuco with burros and all the equipment. This was as soon as we could obtain the necessary animals.

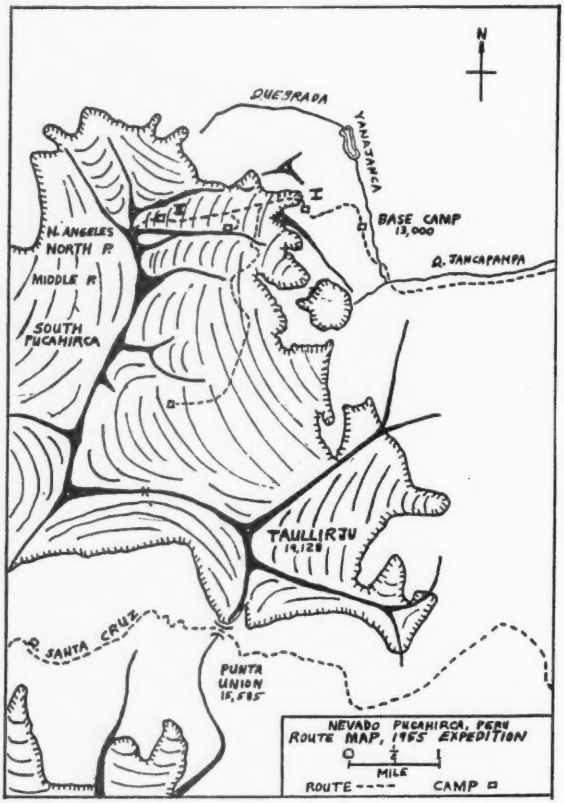
The next morning, June 24th, McMannis and I, with Eugenio, left Caras carrying eight days' supplies. We hiked up Quebrada Santa Cruz and on the third day crossed Punta Union (15,585 feet) and another pass over 15,500 feet. Enroute we had a close view of two of the three sides of Taulliraju and were very impressed with its beauty as well as the climbing difficulties it presented. Crossing another high pass we reached Quebrada Jancapampa the morning of the fifth day. Seeing the Pucahircas for the first time towering 8,000 feet or more above the Jancapampa valley was a magnificent and inspiring sight. After reconnoitering the range we selected a site for base camp about three miles up Quebrada Yanajanca in a meadow by a beautiful waterfall at about 13,000 feet.

On June 27 the main group left Yungay with 20 animals and proceeded up Quebrada Yanganuco over Portachuelo de Yanganuco (15,641 feet), down to Colcabamba, over another pass to Quisuar where they joined our route, and over the final pass into Quebrada Jancapampa. During the trip the arrieros either quit or proved to be completely useless, but the porters took over their work and performed with enthusiasm and dispatch. Everyone pitched in as burro drivers, and after five days of "passa burro" they reached our camp at the head of the beautiful Jancapampa Valley. The results of the reconnaissance were discussed, and we chose to attempt the three northernmost peaks: Middle Pucahirca (20,000 feet), North Pucahirca (20,000 feet) and an unnamed slightly lower peak still farther north. So the next day we moved up the Yanajanca, established Base Camp, and let the arrieros and their burros head for home. They were glad to go!

The next morning six of us, together with three porters, carried heavy loads to the site for Camp I. The route led up steep grass slopes, through small bands of cliffs to a height of about 15,500 feet beside the séracs that formed the snout of one of the glaciers. Tents were set up, and the establishment of Camp I was duly welcomed by two circling condors. More loads were brought up the next day, and on July 4 Camp I was occupied by all eight of us. That same afternoon Kauffman and McMannis worked out a route up the glacier to about 17,000 feet. We all felt a great deal of satisfaction upon finally reaching the ice after all the months of planning and work.

The key to North Pucahirca appeared to be a high col between it and the lower unnamed peak farther to the north. From this col we felt certain both could be climbed. We also hoped to be able to traverse over or

around North Pucahirca and try Middle Pucahirca. To reach this high col, we selected a long, gently rising ridge which terminated in the col and appeared to consist of broad, easy snowslopes with an occasional small ice cliff.



The morning of July 5 found everyone eager to get out on the ice, so we all set out with loads to find a site for Camp II. We zigzagged up the glacier for several hours and then found some steep slopes that led up under rather threatening ice cliffs to the crest of the ridge we planned to follow to the high col. Here on the ridge at about 17,500 feet we dumped our loads and set up three Gerry high-mountain tents. About

50 feet of fixed rope was placed just before the peak of the ridge. Then we all returned to Camp I for the night.

The weather was misty that first day, although clear during the morning and evening. July in the Cordillera is the dry season and usually characterized by many clear days, but on the eastern peaks cloudy conditions continued during most of our stay. The mist was most welcome for working on the glacier, but a handicap for photography and route finding. We marked our entire route on the glacier with bamboo wands, and at times they were an absolute necessity.

On July 6 all eight of us again carried loads to Camp II and this time occupied it for the night. It stormed that night and the next morning, depositing several inches of snow. Despite this, Gagliardo, Kauffman, McMannis and Sowles worked on along the ridge, but encountered difficult ice formations that had been hidden from view. They returned at noon to report the ridge would be long and difficult. This called for more reconnaissance and supplies. That same afternoon Hopponen and I descended all the way to Base Camp to get the supplies going.

The next day while we were bringing the porters with heavy loads up to Camp I, two reconnaissance parties went out from Camp II to search for possible routes on either side of the ridge. Clinch and Walton went to the south and looked at the terrific ice cliffs under the precipitous face of Middle Pucahirca without finding and encouraging possibilities. McMannis and Sowles worked up through the glacier on the north and found a more promising route beginning at the head of the glacier. This meant we should move Camp II off the ridge and on up the glacier. Late in the afternoon Gagliardo and Kauffman descended to Camp I with this news, and on July 9 the entire party helped relocate Camp II near the head of the glacier at 18,000 feet.

On July 10 Clinch, McMannis, Sowles and Walton began to work on the new route above Camp II. They were able to get around the bergschrund in the steep slope above the camp and to the Lower Col, where they anchored a fixed line. That same day Hopponen took two porters from Camp I to Base Camp and returned with supplies especially needed above. On July 11 everyone in Camp I carried loads up the glacier to Camp II and on the way up the mist cleared for a moment, and we saw climbers high on the skyline apparently heading for the Upper Col. We continued to Camp II full of optimism. However, the climbers we had glimpsed encountered new difficulties beginning with a large bergschrund half way between the Lower and Upper Cols. While they were trying to cross the schrund, a small rock and snow avalanche fell

over them, and they returned to Camp II with doubts about the safety of the route. Those of us who had come up from Camp I remained in Camp II, while McMannis and Sowles took the porters down to Camp I.

The next day Gagliardo, Hopponen, Walton and I got off to an early start from Camp II, resolved either to find a new and safer route from the Lower Col to the Upper Col, or make the other one do. The weather was clear and cold and we made good time up the fixed rope to the Lower Col. After studying the mountain, we decided that the route tried the previous day was better than anything else and proceeded up the broad ridge to the upper bergschrund. Here, Walton, who was familiar with the problem from yesterday, started by standing on the fragile lower lip and attacking the upper side while the three of us crouched under the overhanging ice. One ice piton and some good ice work were required to cross the schrund, and about 30 feet above it a rappel picket was placed with a fixed line. From there on we tried to prepare the way as we went up to facilitate our descent. The slope above the schrund was steeper (50 degrees) than below and consisted of very icy snow that would not chip or flake like ice. We continued up with Hopponen and Walton in the lead, placing fixed rope and cutting steps all the way. We climbed as close as possible to the rock to minimize the danger. About the middle of the morning, clouds moved in from the east, and we continued in mist for the rest of the day. Finally we came to a couloir of soft snow opposite a gigantic cornice and we knew we had it made. One easy rope length brought us to the Upper Col itself. We had finally broken through, and the expedition had the key to the peaks. We felt then that this was the real climax because the Upper Col had been our real objective these many days and both summits were so accessible from it.

It was 2:00 P.M. and too late in the day for us to attempt the final 500 feet on North Pucahirca, which we could occasionally see through the blowing mist; but Hopponen and Walton could not resist the lower peak to the north, and its first ascent was made July 12. We named it Nevado Angeles, after the father of our three porters who was killed in the Huaraz flood in 1941.

At 4:00 P.M. we began the descent from the Upper Col, and although we hurried we did not reach the bergschrund until twilight. By then the wind was spitting snow, and in the blowing mist everything was a dull grey. We could not distinguish any landmarks to guide us to the Lower Col, much less detect the steepness of the slope we were standing on except by feel. We put on our headlights and found them to be almost useless in the blowing snow. Worst of all, there were no wands on this

section because that morning we had saved the few we carried for higher on the mountain. The snow had been so hard in the morning that our crampons had hardly left a mark. By dead reckoning we began to crampon down the slope, and very soon it was completely dark. We all stopped, and Walton began a circle at about rope length to try to determine where we were. He was below and a little to one side of us when we saw his light suddenly drop out of sight and the rope went tight on Hopponen's ice axe belay. Gagliardo gave me a belay, and I ran down the taut rope. Walton had fallen over an ice cliff that lay directly below us, and very faintly through the wind I could hear him calling. I answered, but in the wind could not understand what he was yelling. I climbed back up to the others, and for a moment we considered what action to take. One thing was certain: he was on tension, and no man could live for long hanging in a chest loop at 19,000 feet. It took only a few seconds to decide to pull him up. A prusik brake was rigged with the other rope, and we began pulling up the rope. We had only taken in a few feet when the rope suddenly went slack. We took the rest in hurriedly and found the end unravelled for about a foot and nothing else. We were stricken with apprehension. But soon we saw a faint glow in the blowing snow and clouds below us. We called but heard no reply. Finally we could tell that the glow was moving across the slope under the cliff below us. At last we heard Walton call "safe" and ask for the rope again. We threw it down, and up through the darkness and storm came our friend. Our joy knew no bounds! His only damage was a scratched forehead, bruised ribs, and a broken strap on his rucksack. He recounted how he had dropped off the cliff, swinging down and across its face, and reaching the end of the rope with his feet touching soft snow, but still on tension. Unable to make himself understood and suffering from the tension on his waist loop while yet so close to a safe landing place, he had boldly cut the rope with his pocket knife when we tried to pull him up. Then in a nice bit of solo climbing, he had cautiously traversed under and around the ice cliff.

Now we knew there were ice cliffs immediately below and close on both sides of us. One close call was enough; we prepared to bivouac. We cut a ledge to stand on and began to dig a cave in the icy snow, cutting a small entrance and enlarging it with our ice axes as we went deeper. After almost two hours of digging, the hole was just big enough for the four of us. We put on all of our clothing, crammed ourselves inside, and pulled a block of snow into the doorway. We had enough candles to keep one going all through the long night, and had slanted our tunnel

and floor upward to trap whatever warm air our bodies and the candles might produce. The ceiling was scored with the cuts made by our ice axes, and throughout the night water collected on these points and slowly dripped on us; for crowded as we were we could not avoid it. Although we were chilly and uncomfortable, we did not suffer frostbite.

At 6:00 A.M., when daylight finally came, the storm was still going strong. We crawled out of our hole, and our clothes immediately froze where they had become wet. There was about four inches of new snow. We climbed back up the slope and located the proper ridge slightly to the east.

Meanwhile, our companions in Camp II had spent an anxious night and as soon as it was light set out to search for us. We met in the storm on the fixed rope just below the Lower Col, and all returned to camp. The rest of the day was spent sleeping and making hot food and drinks in the excellent outdoor kitchen Kauffman had constructed of snow blocks.

We had climbed one big peak and were very close on the other, but it was now time to schedule the remainder of our stay in this area. So we set evacuation dates for all camps and decided that Dave Gagliardo, who acted as the expedition leader when necessary and was the only one of us who spoke fluent Spanish, would have to go to Pomabamba as soon as possible to obtain burros and supplies. I agreed to accompany him. Next day Gagliardo and I went down the glacier for Pomabamba while Clinch and Kauffman climbed up the route to attempt the other peak. They left Camp II an hour before daylight and making good time up the prepared route reached the Upper Col at 9:00 A.M. Soon the clouds closed in as usual, but they pushed up the steep slope, over the bergschrund, and on to the summit cornice[1] of North Pucahirca (*ca.* 20,000 feet), our second first ascent. However, they were unable to traverse over or around to Middle Pucahirca. Returning to the Upper Col they made another ascent of Angeles and descended to Camp II with a good day's work accomplished.

Going down the glacier to Base Camp Gagliardo and I found our old route had been wiped out by an avalanche from the ice cliffs above, and jumbled ice blocks now covered our route. Continuing from Base Camp the next day, we hiked down the Jancapampa Valley to Pomabamba. It

[1]The highest point of North Pucahirca appears to be a large and dangerous cornice upon which none of the summit parties cared to venture. As stated by Kauffman (*Appalachia,* Dec. 1955), the summit parties were a mere 20 feet below the top of the cornice and probably higher than the true summit. It is because of this cornice that the traverse from North Pucahirca to Middle Pucahirca could not be completed. —*Editor.*

was an interesting experience to come down to 10,000 feet and a semi-tropical climate, after living on the ice for many days at 18,000 feet and above. We found Pomabamba to be a town of over 5,000 inhabitants, situated two to three days' journey from the nearest road. The local people were very friendly and fascinated by our height (over six feet), our beards (abundant), and most of all by the size of our boots (Army ski mountaineering). After two days and nights of bargaining, delays, telegrams to the Santa Valley, and walking all over town, we finally got bread, native corn, sugar, salt, and beer; contracted for 10 animals to take the expedition back to civilization; and selected a new route for our departure. Instead of returning over Portachuelo de Yanganuco we would go north to the road head at Pasacancha. We were also well initiated into the local drinking customs (Salud!) and left Pomabamba with many fine friendships.

Meanwhile, McMannis and Sowles had moved up to Camp II and on July 16, with Clinch, Hopponen, and Walton, climbed to the Upper Col. The cloudy weather we had been plagued with these many days finally ended, but in its place the climbers had to endure the strongest winds and greatest cold we experienced. From the Upper Col, McMannis and Sowles climbed North Pucahirca but were prevented by the cornice from traversing over the summit on to Middle Pucahirca. Clinch and Walton inspected the west face of North Pucahirca, but found a traverse out of the question there. However, there did appear a possible route up the steep slope to the east ridge of North Pucahirca, up the ridge to the south of the summit of North Pucahirca, down a steep slope to the col between the North and Middle peaks, then up to the summit of Middle Pucahirca. Obviously, this would require the establishment of a camp on the Upper Col. Since our supplies would not allow us to stay on the mountain long enough to do this, we would have to be content with ascents of North Pucahirca and Angeles. McMannis, Sowles, and Walton ascended Angeles, and then everyone returned to Camp II, leaving Middle Pucahirca for future expeditions.

On July 17 the evacuation of high camps began, and everyone in Camp II carried loads down to Camp I. On the 18th Clinch took the porters back for the final carry from Camp II. On the same day Kauffman and Sowles climbed a beautiful little peak above Camp I (*ca.* 17,500 feet).

Soon we were all enjoying the comforts of Base Camp, except the indomitable Walton, who with Clinch made a two-day reconnaissance across the great ice field. They found a practical route from our Camp I to the foot of South Pucahirca, where they spent the night. This in-

formation should be of value to future expeditions who might wish to use our camp sites and also place a high camp near Taulliraju and South Pucahirca.

We bought a sheep from the Indians in the Jancapampa Valley and when everyone was back in Base Camp opened the case of cerveza and indulged in lazy celebration. Once again it was wonderful to enjoy the evening camp fire, which as usual was enlivened by firecrackers and tall stories.

On July 22 our animals arrived, and we left Quebrada Yanajanca, on the trail for Pasacancha. For three days we hiked over country seen by few Peruvians and almost no foreigners, covering 40-50 miles. The travel was at an altitude of 10,000 to 14,000 feet, up and down hills and ridges that would be considered mountain ranges at home. Foot sore and weary we arrived in the little mining village of Pasacancha on July 24, where we discovered the resident engineer was a member of the Italian Alpine Club from Venice. Our friends in the Guardia Civil in Pomabamba had sent instructions ahead of us that we were to be given the first truck into Pasacancha. We got our truck at 3:00 the next morning, and after arriving in Yungay, many of us were convinced that climbing the mountains was the easiest and safest part of the trip.

Vacation time was now running out for many of us, and on July 28, Clinch, Gagliardo, Kauffman, McMannis, and I returned to Lima and headed for home.

Hopponen, Sowles and Walton stayed in Yungay to climb Huascaran (22,205 feet), the highest mountain in Peru. Base Camp was established on July 30, and Camp I the next day at about 16,500 feet, just below the Garganta ice fall which constitutes the main technical difficulty of the ascent. Camp II was established at slightly over 19,000 feet. During the ascent, they enjoyed the companionship of the Deutscher Alpenverein team who were at Huascaran at that time. On August 3 Hopponen, Sowles and Walton, with Porter Emilio, reached the South Summit at 4:00 P.M., after enduring severe winds and ground blizzards throughout most of the climb.

The ascent of Huascaran ended the climbing activities of our expedition. Hopponen spent some time processing and packing the specimens of medicinal plants he had collected; and with Sowles, packed up all our equipment for shipment to the United States.

We hope the results of our trip will encourage future expeditions to the Cordillera Blanca, for unclimbed peaks such as Chacraraju, Middle Pucahirca, and Taulliraju will certainly provide enough challenge. We

owe a great debt to those who had climbed before us. Without their prior experience to draw upon, the thorough planning and equipping of our expedition and the successful results it produced would not have been possible.

Summary of Statistics

ASCENTS: Nevado Angeles, *ca.* 19,750 feet, first ascent, July 12, 1955; Hopponen and Walton. July 14, 1955; Clinch and Kauffman. July 16, 1955; McMannis, Sowles, and Walton.

North Pucahirca, *ca.* 20,000 feet, first ascent, July 14, 1955; Clinch and Kauffman. July 16, 1955; McMannis and Sowles.

Unnamed Peak, *ca.* 17,500 feet, first ascent, July 18, 1955; Kauffman and Sowles.

Huascaran, 22,205 feet, August 3, 1955; Hopponen, Sowles, Walton, and Porter Emilio.

PERSONNEL: Nick Clinch, Raymond Hopponen, Andrew J. Kauffman II, William McMannis, Harvey N. Platts, David A. Sowles, and Harold Walton.

ODE TO UNIVERSITY PEAK

ROBERT W. CROMER, M.D.

Far to the North where the glaciers lie,
And Northern Lights sweep the summer sky,
Where the great brown bear and Dall Sheep stray,
There's a wild land where the storm-winds play.

The land of the Copper River's birth . . .
Seaward slashing the tree-cloaked earth,
It's a surging, throbbing, silt-filled flood,
An artery pulsing with glacial blood.

And river, forest, and glacier stand
As bulwarks guarding the inner land
Where primeval mountains rise, aloof,
Their cold crags clawing the cloud-streaked roof.

Towering high o'er the glacier's head,
Rocky roots deep in an icy bed,
A pallid pinnacle cold and bleak
Lifts up its desolate, snow-clad peak.

On its frozen flanks no creatures roam,
No green-growing plant makes here its home.
An insentient thing, and yet, not dumb,
It tells its tale with a timeless tongue.

The sleeping glacier shudders and groans,
And stretches its frigid, dormant bones;
The steep slopes speak with avalanche-roar;
The winds sing a song, forevermore.

There, all alone in a dead dream-world,
Where wild winds wailed and the soft snows swirled,
Circled by summits towering tall,
We camped before her mighty west wall.

We came to climb this goddess of snow;
In our tents we heard those wild winds blow.
Fiercely shrieking they laughed us to scorn,
Then stole away on the wings of morn.

She plagued us with fog and snow and sleet,
And curled herself in a soft, white sheet . . .
Glittering, then, shown forth in the sun
And dared us to tread where trod had none.

In vain we flouted the giant's wrath;
Impassable obstacles barred our path:
Huge, hulking ice-walls shining and steep;
Crevasses, great chasms wide and deep.

We failed, yet failure was not defeat,
But, to taste adventure, bittersweet.
We heard the challenge. We met the call. . . .
And reaching the summit isn't all.

Dr. Cromer was a member of the 1954 expedition that attempted University Peak. St. Elias Range (*A.A.J.*, 1955, pp. 84-87), and composed this poem during the months following his return to Wisconsin. In 1955 University Peak was successfully climbed by a party of six (see notes).

In the Chugach Range, Alaska

ROBERT WEST

"The Switzerland of Alaska" is the phrase the travel posters use to describe the little seaport town of Valdez, Alaska. Situated on the flat gravel delta of the stream draining the Valdez Glacier and surrounded by 5,000-foot peaks, the town is certainly a beautiful place when the weather is clear. But by June 16, after we had been waiting almost a week to fly in to the Columbia Glacier, every member of the Chugach Range Expedition was heartily annoyed at the prospect of spending another day in the place.

We had come from all parts of the country: my wife Peggy and I from Pennsylvania; Bill Coaker, Norm Aubrey and Larry Nielsen from Springfield, Mass.; Art Maki and Bob Bale from Seattle; and Jim Maxwell, who was taking time off from his geological investigations in Southern California.

Larry Nielsen, the leader of the expedition, had planned for the trip and dreamed of coming to the Chugach Range for years. His detailed knowledge of the area, gained through hundreds of hours of study of aerial photographs, was a valuable asset to us.

The Chugach Range[1] is bisected by the valley containing College Fiord and the Harvard Glacier. To the west rises a range of peaks dominated by Mt. Marcus Baker,[2] which stands high above its neighbors. The uplift east of College Fiord is more extensive, including at least five peaks of 12,000 feet. Except for some minor ascents from the east branch of the Columbia Glacier, and an abortive attempt to reach the high peaks via the Harvard Glacier,[3] the region had not been visited by mountaineers. The upper 30 miles of the Columbia Glacier, including the area around the high peaks, had never been explored. These high peaks were our objectives, and our original plan was to fly in to the head of the Columbia Glacier, just beneath the highest peaks, in the heart of the unexplored area.

We also hoped to fly out, but since we could not be sure that the weather would permit landings, we had to plan an "escape route" by which we

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[1] A map of the Chugach Range prepared by Dr. Nielsen may be found in *Appalachia*, Dec. 1955, p. 535.—Ed.
[2] Climbed in 1939 by B. Washburn and others; Am. Alpine J., Vol. 3, p. 257 (1939).
[3] Dora Keen, "Exploring the Harvard Glacier," Harpers, Vol. 132, p. 113 (1915).

CHUGACH RANGE, ALASKA. Mount Powdertop (left) and the two Flattop Peaks from the northwest slopes of Mount Fafnir. By Arthur Maki

(Above) THE TWO PEAKS OF MOUNT VALHALLA. Mount Fafnir *(far right)* from the air.
(Below) CAMP III, BELOW MOUNT ELUSIVE. Mount Witherspoon on left.
Photos by Robert West

could walk back to Valdez—75 miles from the head of the Columbia Glacier.

Most of the first week in Valdez we spent waiting for the weather to clear. Lee Johnson, Cordova Airlines representative in Valdez, generously loaned us his cabin as living quarters. We used the extra time to check on our escape route. Norm and I inspected the last 10 miles from a rented boat out on Valdez Bay, and left a cache of food at the end of the Shoup Glacier. On an intermittent clear day, an aerial reconnaissance of the route was also carried out, and an airdrop of emergency supplies was made at 3,200 feet on the East Branch of the Columbia Glacier.

In addition, parties visited the Valdez Glacier on two separate days, and one day Art, Peggy and I climbed 5,300-foot West Peak—leaving at 2 P.M. and returning well after midnight!

June 16 dawned brilliantly clear, and at 3 P.M. the plane showed up. We now found to our dismay that the pilots were unwilling to land above 3,200 feet. There was nothing for us to do but accept the decision and land at the site of our airdrop on the East Branch.

Art Maki was the first man in on the glacier. He waited right at the landing spot for an hour, enjoying the panorama of sharp-crested snow-peaks, until I arrived to join him. With two of us there, we could set about establishing Base Camp. The landings went off smoothly once begun, and our pilot, Herb Haley, was also able to bring Larry in that evening.

Base Camp was set up a few hundred yards from our snow "landing strip," near the bottom of a 1,500-foot icefall leading up to the main Columbia Glacier. The next morning the three of us collected all the packages from the "emergency" airdrop and, under Larry's direction, carried out measurements on the glacier. Digging a pit, we struck water five feet down, and thus was born "The Columbia Glacier Waterworks," our base camp supply. In the afternoon we set off to reconnoiter a route up through the icefall. We found a route easily enough, but the experience of negotiating the icefall in the late afternoon, threatened by avalanches from the saturated slopes above us, convinced us that we should do all our climbing at night. We returned to Base Camp to find the airlift going strong, and by 6 P.M. the last man was "on ice." By now we had decided to try to get as close as possible to the high peaks, despite our present unfavorable location.

We rose at 6 A.M. and went off to the icefall with loads of food and gas which we cached at a big bridged crevasse about halfway up. Then back to Base Camp, where we cached all surplus food and extra clothes on a rocky moraine. In the evening we relayed loads up the icefall until all

of our supplies, about 100 pounds per man, were at the top. With great foresight, Larry had brought two large sheets of corrugated aluminum into Base Camp, and these now proved their value as sledges. Once over the icefall we were able to load most of the gear on the sledges and carry only light packboard loads.

After another 1,000 feet of uphill sledging, we reached the pass between the two branches of the glacier. Here ice-clad Pilot Peak came into view, rising in one gigantic sheer cliff, 6,000 feet above the main Columbia Glacier. At this spectacular spot we decided to camp. The troublesome question of whether our morning meal should be "dinner" or "breakfast" was settled in favor of dinner, and we went to bed for the day at 8 A.M.

Two miles of easy downhill going now separated us from the untrodden snows of the main Columbia Glacier. We knew that once on the main glacier, we would have to work our way up another icefall. That evening, with the weather rapidly deteriorating, Jim and I were sent off ahead of the sledge parties through this crevassed area. Staying close to the east edge of the glacier, we found a route without difficulty. But after a few hours the fog closed in on us. We stopped where we were, pitched a temporary camp, and slept for four hours.

By 3:30 A.M. a stiff wind had come up and the visibility was a little better. We pushed on across the glacier as the snow began to fall. The force of the wind was increasing hourly. We established Camp II at 6,300 feet at 8 A.M., when we could go no farther; we were absolutely "done in" from fighting the blizzard. Blinding snow and a howling wind continued during the day and for the next 48 hours. Sledging, of course, was out of the question. Cooking was impossible much of the time, but we managed to melt enough snow for drinking water. Even leaving the tents for a few minutes was a major undertaking. Every few hours someone would get up, shovel the accumulated snow off of the tents, and return chilled and exhausted to his sleeping bag. We spent most of the time in a drowsy semi-consciousness, wondering dully whether the tents would collapse before they blew away or vice versa.

Finally, on the morning of June 22, the clouds lifted, and the morning dawned sunny and warm. Just as we had succeeded in digging out the camp, Herb and Lee Johnson flew over in the Cessna and dropped our remaining food. One of the packages landed in a large crevasse, so we sent Art down on a rope and then "rescued" both Art and the package. The airdrop contained delicacies like canned tomato juice and peaches, and we gorged happily after our insufficient diet during the blizzard.

Our chances were now slimmer, but there was still hope that we might be able to climb Mt. Witherspoon. That night in crisp, clear weather, we sledged into the region of the high peaks. The snow of one massive peak which we had named "Mt. Einstein,"[4] glowed all night with changing colors as sunset merged with sunrise. We passed near the impressive icy towers of Mt. Valhalla and camped below Mt. Elusive, on a bridged crevasse in order to get some shelter from the chill wind. Here we had our first view of the long south ridge of Mt. Witherspoon, apparently the only possible route from this side of the mountain.

The next evening we sledged to our last camp, at the very head of the Columbia Glacier, on the flanks of Mt. Witherspoon itself. The surface of the glacier at this elevation was powdery, making walking difficult even with snow shoes, and sledging became arduous. Camp IV was at 9,160 feet.

All we needed now was a good clear day for a crack at the summit; but a few hours after we arrived we were beset by more of the bad weather for which the Chugach Range is justly famous. It snowed steadily for two days, though fortunately we were spared the high winds of the earlier blizzard.

Late on the morning of June 26 it was still foggy and snowing lightly, but quite bright; we decided it was now or never. We left camp at noon and went up the snow to the south ridge, where we exchanged our snowshoes for crampons. Then for several hours we worked our way up the broad steep ridge. The route alternated between wind-slab and ice, with occasional crevasses. It was cold and windy with visibility restricted to about 100 feet. Suddenly the South summit loomed up out of the fog, and in a few minutes we were at the top. The time was now 6 P.M.

Many cold minutes were spent waiting on the South peak for the clouds to break enough for us to find the ridge of the true summit. Finally the clouds broke briefly, and with Jim leading we started out onto the steeply corniced ridge. After about 30 minutes of belayed climbing through the fog, we encountered a vertical break where apparently the entire cornice had broken off and slid down the face of the mountain. The gap so formed was only a few yards wide, but fully 80 feet deep, with vertical walls of ice. This obstacle, together with the late hour and poor weather, forced us to turn homeward. We returned to high camp in three and one-half hours.

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[4]For Albert Einstein, who died only shortly before our expedition. Since there were five chemists in our party we decided to name the two other unnamed high peaks for two great American chemists, now also deceased: Willard Gibbs and Gilbert Lewis.

That evening we celebrated our ascent of the South peak and drowned our sorrow at missing the summit proper.

It was still snowing the next day. We broke camp at 2 P.M. after rifling the remaining rations for the most desirable items of food. We were able to follow our wanded trail through the murk to Camp III, but from here we had to travel by compass most of the way to our cache at Camp II. We pitched camp here, in the usual snowstorm, tired after seven hours of hard sledging.

The weather was unimproved the next day, as the downhill party prepared to go. Art, Peggy, and I were to remain at Camp II for a few extra days in hopes of doing some climbing. We shook hands with the others and in minutes they had disappeared from sight into the fog, leaving us very lonely—as Peggy put it, "Three little specks of warmth on the whole Columbia Glacier."

We were glad we had decided to stay when the next day dawned promisingly bright. With renewed spirits we set off to climb "Mt. Sharkstooth," a summit near Mt. Einstein, which appeared from the glacier as a shining white fang. We snowshoed near the edge of the glacier and up into a small cirque, and then started up the mountain proper. The climb went without incident until we reached the bergschrund. Belayed by both of us, Art led up to the snow bridge and then jumped back just in time as the bridge collapsed with a roar and a few tons of ice and snow fell into the 'schrund. Somewhat shaken, we backed off and tried another bridge, this time with success. A few more leads brought us up the steep snow to the ridge, which we traversed without difficulty. The true summit was a thin, fragile cornice, deeply undercut—so we considered the mountain climbed when we had reached a point only a short distance away, six hours after leaving camp. We estimated the elevation to be about 9,500 feet. Return to camp was by the same route.

The next day looked doubtful, with snow squalls in the morning. Peggy stayed in camp nursing a painful sunburn while Art and I left to attempt Mt. Powdertop, directly across the glacier from Camp II. We crossed the five-mile width of the glacier and climbed to the col east of our peak with no trouble. But once on the ridge of the mountain the clouds descended, and visibility decreased to about 10 feet. We tried to grope onward, but after I nearly succeeded in leading Art over the top of a cornice, we decided to stop for lunch. After eating, we occupied ourselves by making a careful collection of lichens and rocks from outcrops on the ridge, still hoping that the weather might improve. To our surprise, after an hour and

a half the cloud suddenly lifted, and the route to the summit lay revealed before us.

Mt. Powdertop provided the best climbing of the expedition as we climbed up the long corniced ridge, among fantastic rime windforms, cutting steps up occasionally steep icy spots. We came out on the 10,000-foot summit two hours after leaving the col. The weather continued to improve, and the glacier surface was slushy in the hot sun on our return trip. Peggy had the stove going as we returned, and that night we enjoyed the luxury of being served dinner in our sleeping bags.

The next day dawned brilliantly clear, and we were all in favor of one more climb before sledging down to Base Camp. At Art's suggestion the three of us set off on snowshoes across the Columbia again, to attempt the most prominent peak (later named "Mt. Fafnir") on the long ridge between Mt. Powdertop and Mt. Valhalla. As we reached the other side of the glacier we were grateful to see the Piper Cub coming in on its promised check flight. We stamped out a signal in the snow asking for a landing in three days. That morning Larry and the others were flown out from Base Camp, having completed their scientific studies of the East Branch of the Columbia.

We climbed up a small icefall east of our mountain, wending our way through a series of small crevasses, and continued on behind the peak of the snow pass at the head of the Science Glacier. The rest of the long climb up the broad northeast shoulder was not difficult, and we reached the summit at 4:30 P.M.—nine hours after leaving camp. The view was magnificent. We were very near the high peaks of the area, and, at about 10,800 feet, only about 2,000 feet below the highest summits. The long knife-edge ridge of Mt. Witherspoon, and the snow-plastered hulks of Mts. Einstein and Lewis stood out in impressive detail; but most striking of all was Mt. Valhalla, the *belle montagne* of the Chugach, seemingly almost close enough to touch. We left the summit reluctantly and returned "home" to Camp II in five hours.

The next day we cached all but emergency supplies and sledged down the glacier. We spent the night at Camp I in the divide between the East Branch and the main Columbia Glacier. That evening the weather again closed in, and we awoke the next morning in a light rain. In the afternoon, in very poor weather, we made an abortive attempt to climb the ridge directly north of the divide. We decided to turn in early that night and get under way early the next day. That night it cleared and froze hard, providing an ideal surface for sledging down to Base Camp. We had a hilarious time slithering down the steep crusted snow, all three of us trying

to brake the sledge. The icefall route was still in good condition despite much melting, and we rapidly descended to Base Camp.

It was only 8 A.M. on July 5, when we arrived and there was no sign of the plane, so leaving Peggy to wait for the plane and to fly out first, Art and I set off to climb the little 6,200-foot peak above Base Camp which Larry had named "Pandora." We charged off at top speed, expecting to have to return as soon as the airplane came into view. We climbed hurriedly up the rocks and snow of the south ridge. Among the rocks on the summit we found a boot-lace. Apparently Pandora was one of the minor ascents completed by a Harvard Party in the 1930's.

We returned to camp at a more leisurely pace. There was still no sign of the plane, so we sat around sunning ourselves and relaxing. At 5:30 P.M. we decided the plane was not coming. After we pitched tents and began cooking supper, the plane, of course, arrived. We were relieved to see it, for the clouds were descending again and promising more bad weather. In the chaos of packing, Peggy knocked our dinner over onto the snow; but by 9 P.M. we were all enjoying a much more palatable dinner in a restaurant in Valdez.

Summary of Statistics

ASCENTS: Mt. Witherspoon, *ca.* 13,000 feet, attempt.
Mt. Witherspoon, South Peak, 11,300 feet, first ascent, June 26, 1955, entire party.
Mt. Sharkstooth, *ca.* 9,500 feet, first ascent, June 29, entire party.
Mt. Fafnir, *ca.* 11,000 feet, first ascent, July 1, Maki, R. and M. West.
West Peak, *ca.* 5,300 feet, June 15, Maki, R. and M. West.
Mt. Powdertop, *ca.* 10,000 feet, first ascent, June 30, Maki, R. West.
Pandora Peak, *ca.* 6,200 feet, second ascent, July 5, Maki, R. West.

EXPLORATION: Upper Columbia Glacier, Chugach Range, Alaska.

SCIENTIFIC STUDIES: Columbia Glacier and its East Branch.

PERSONNEL: Dr. Lawrence Nielsen, leader; Dr. Norman Aubrey, Robert Bale, Dr. William Coaker, Arthur Maki, James Maxwell, Margaret West, Dr. Robert West.

Mapping McKinley's Southeast Approaches

BRADFORD WASHBURN

FEW living persons have enjoyed the privilege of spending a month in the magnificent Great Amphitheater or Basin of Ruth Glacier. Lying between the vertiginous granite crags of the Great Gorge and the foot of the southeastern cliffs of Mount McKinley, the Amphitheater probably affords the visitor the greatest variety of superb closeup views of McKinley which can be had from any side. Unfortunately, however, its weather is not in a class with the other sides of the great mountain, as it is dominated by the flow of relatively warm, moist air from the coast, in marked contrast to the colder and drier climate on the other side of the Alaska Range.

Only two parties in history have traversed the Great Amphitheater and traveled afoot the entire forty miles from the Chulitna River to the head of the Ruth—the Parker-Browne expedition of 1910 and Elton Thayer's in 1954. The Mazama Expedition which "raced" Browne and Parker up the glacier in 1910, reached the center of the Amphitheater (11 miles below the glacier's head) and then swung off to the south, making the first ascents of Mount Barrill (7,650 feet) on July 13 and Pittock Pass (7,250 feet) on the 14th.

The Parker-Browne expedition spent nearly three weeks that same July exploring the Amphitheater and the glaciers leading into it from the slopes of both Mount Silverthrone and Mount McKinley, in a futile effort to climb from this side. Thayer's party (1954) only stayed in the Amphitheater itself for two days (April 23-25) but spent an eventful week traversing the Great Gorge, receiving two air drops near the center of the Amphitheater and relaying their supplies to the very head of the Ruth's extreme southwest fork—an incredibly speedy maneuver, made possible by hard work, careful planning and flawless spring weather.

The only other persons ever to approach the Great Amphitheater afoot were Dr. Frederick A. Cook and Edward Barrill, who reached a point near the upper gateway of the Great Gorge (5,100 feet) on or about September 10, 1906. A photograph taken from this point and published opposite page 193 of Dr. Cook's book, *To the Top of the Continent,* stands as proof that Cook and his companion at least got this far in their alleged first ascent of Mount McKinley that year.

In the spring of 1955, Boston's Museum of Science organized a small party to make a one-month visit to the Amphitheater for the purpose of obtaining the necessary ground control to complete the survey network for a new large-scale map of the McKinley region. Previous expeditions in 1945, 1947, 1949, 1951, and 1953 had secured all of the additional control needed to map the other sides and top of the peak.

This little expedition had no climbing objectives other than the first ascent of "Peak 9,550" at the head of the Great Gorge, on which the key survey station of the local network was to be established. The party consisted of Richard T. Kleber of the museum staff, David Fisher of Toronto,[1] George P. Gardner, Jr., and Carlton P. Fuller (both trustees of the Museum) and Bradford Washburn (leader).

Kleber flew to Alaska early in March, in order to buy food and miscellaneous equipment in Anchorage and Talkeetna and to arrange about preliminary flights to the Amphitheater by Don Sheldon, Talkeetna's experienced bush pilot. By March 18, when Fisher and I reached Talkeetna by train from Anchorage, Sheldon had already made several successful Super-Cub flights with food, fuel and tents, and a sizable cache with a satisfactory airstrip had been established at 5,300-foot altitude, precisely where we had wanted it in the middle of the Amphitheater.

The early spring almost always brings clear weather to Alaska, and although it is usually too cold and windy to try climbing much above 15,000 feet, it is an ideal time to carry out survey work or low-altitude exploration. 1955 was no exception to the rule, with a final tally of 16 beautiful days, five partly-clear and only nine downright bad out of a total of 30 spent in the field—a fabulous record for an Alaskan trip.

Two flights established a base camp on March 19, I sitting in Dick Kleber's lap on the first and Fisher with the final load of freight arriving on the second—in describing this trip I am tempted to quote Horace B. de Saussure (re Mont Blanc, 1787) "la science est une grande dame qui voyage avec beaucoup de bagages!"

By the time that Carl Fuller and George Gardner had joined us for a 10-day visit on March 27, we had had so much clear weather that we were really exhausted, all our basic survey stations except one were positioned and preliminary observations almost completed. Temperatures ranged from zero up to a maximum of 17 above in the daytime (average about +10°) and down to 32 below at night (average about —15°).

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[1]An experienced young British climber and member of the 1954 Rakaposhi expedition.

THE GREAT GORGE OF THE RUTH GLACIER

Southeast of Mount McKinley

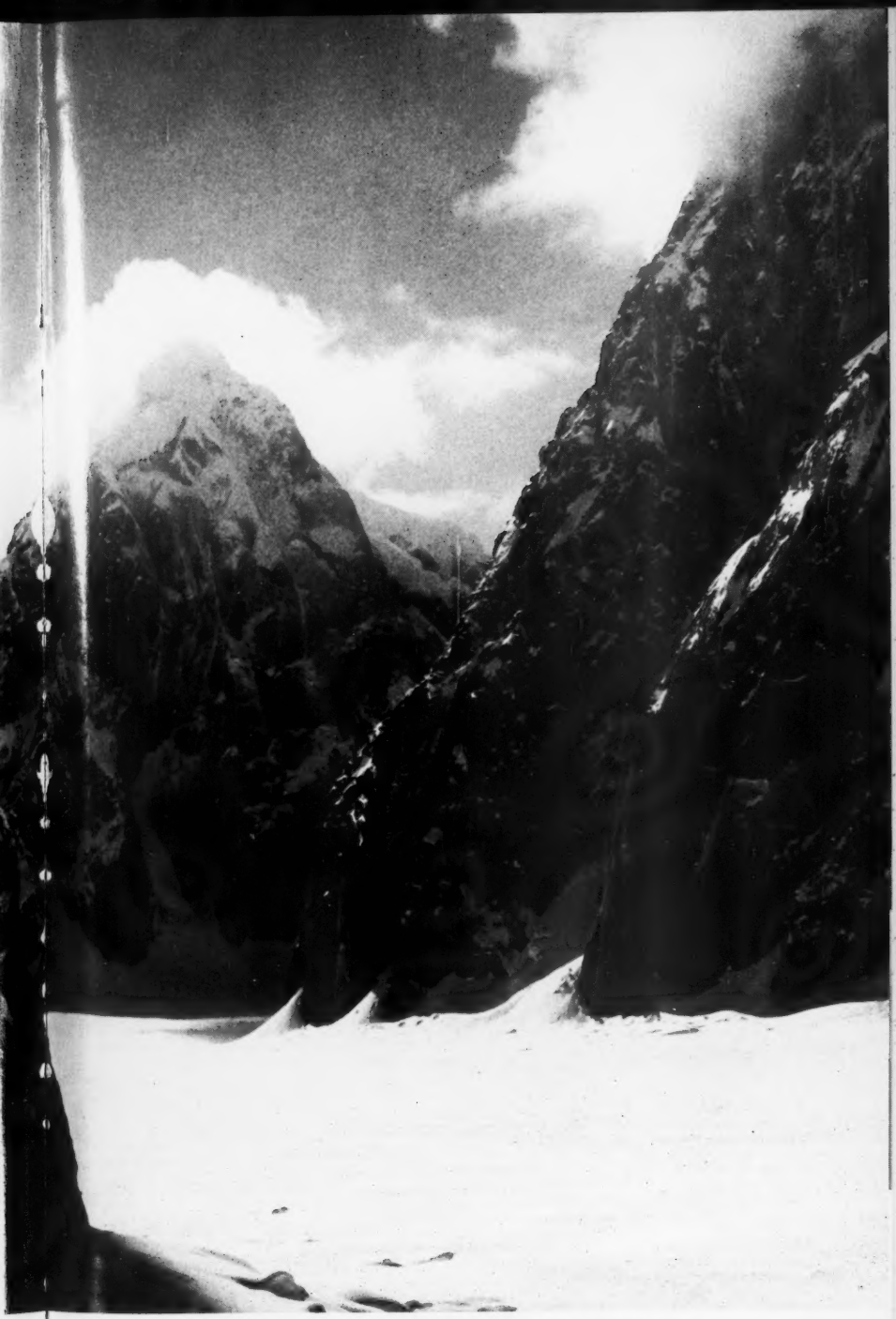
EIGHT PHOTOGRAPHS BY
BRADFORD WASHBURN • 1955

Expedition pilot Don Sheldon, with his Supercub airplane after one of his many landings at about 5,300 feet.

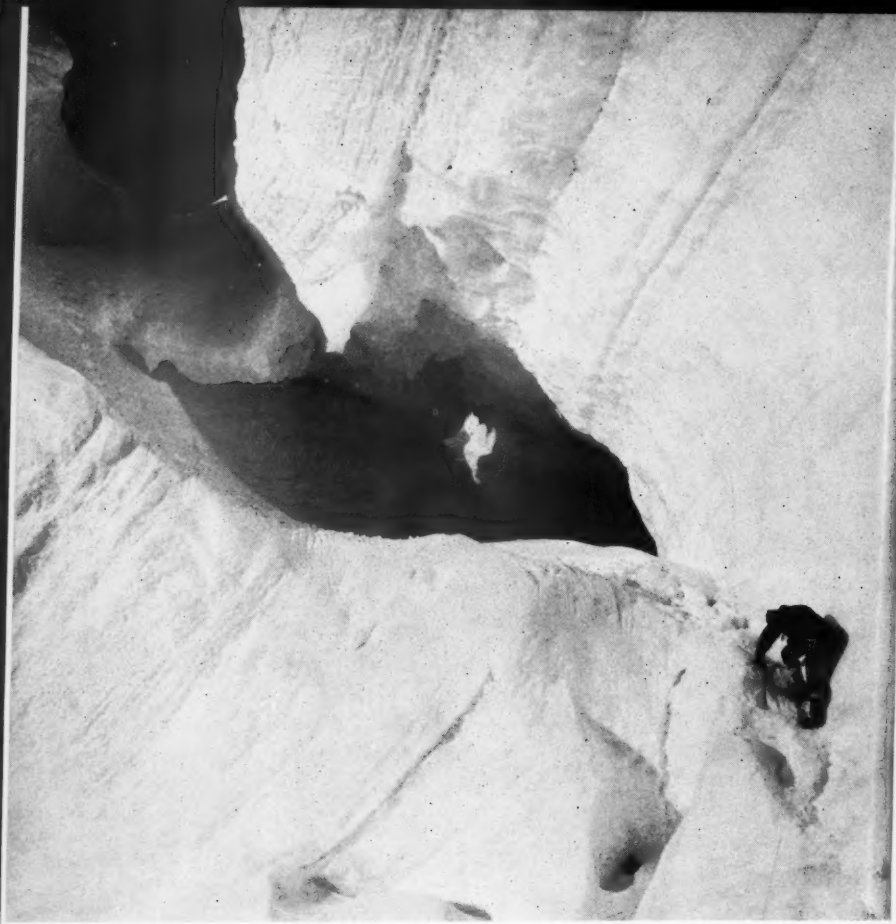
(Facing) Base Camp in the center of the Great Amphitheater. Mount McKinley in distance at left; Mount Dan Beard is the domed peak at right.

(Below) Bradford Washburn surveying and David Fisher recording angles in front of Base Camp. The Moose's Tooth rises in the background.

DOWN THE GREAT GORGE, NEAR THE BASE O



HE BASE OF THE MOOSE'S TOOTH. ALL THESE PEAKS ARE UNCLIMBED.



Fisher on the way up through the crevice in the ice barrier at 8,200 feet on Mount Dickey.

Mount McKinley; looking northwestward from the upper end of the Great Gorge.

A steep tributary glacier cascading into the east side of the Great Gorge opposite Mount Di key. Note figures in foreground.

Snowshoeing from station to station across the floor of the Amphitheater, we reveled in day after day of incredible mountain scenery rising above us on all sides. We made the first ascent of the 6,900-foot notch between the Ruth and Buckskin glaciers on March 29 and got a breathtaking view of the unclimbed Moose's Tooth[2] in the beautiful late-afternoon light.

On March 31 and April 1-2, with Don Sheldon's assistance, we devoted two full days to a thorough study of the pictures taken by Dr. Cook during his 1906 trip to McKinley. For legal (copyright) reasons, it is impossible to relate the results of this fascinating bit of geographical detective work until next fall (50 years after Cook's trip). Suffice it to say that we precisely located the spot from which every one of Dr. Cook's key unidentified photographs was made and not a single one of them was exposed at an altitude of more than 5,400 feet!

Several trips were made to the crest of Pittock Pass (7,250 feet) for the first time since 1910 and a substantial cache built up for a camp here. This was first occupied by Dave Fisher and Carl Fuller on the evening of April 5, but it was not until April 9 that Fisher and I finally packed our survey gear to the top of "Peak 9,550" which we called Mt. Dickey in honor of William A. Dickey, who named Mt. McKinley in the fall of 1896. There were no technical problems of note in this little first ascent, although the vertical ice barrier at 8,200 feet (we found a nice little route) might easily cause considerable trouble under certain conditions.

The view from the top of Mt. Dickey is utterly magnificent. It is certain to be considered along with those from Mts. Silverthrone, Brooks, Foraker, and Hunter, as one of North America's truly great panoramas . . . but this one has the added advantage of being readily accessible to civilization. We spent five hours on the summit, completing and then checking all of our observations, which we made with a highly precise Wild T-3 Theodolite. Scarcely a cloud came into sight all day long, and the changing light and shadows on the stupendous southeastern cliffs and ridges of McKinley were a never-to-be-forgotten sight.

As we descended into camp and our trip came to a close, we felt that we had not only completed our map, but also had succeeded in securing a wealth of new information about this wonderful region. Mt. Huntington (12,240 feet), The Rooster Comb (10,180 feet), the Moose's Tooth (10,335 feet), and Mt. Dan Beard (10,260 feet) are the four major un-

[2]A local native name for this superb 10,335-foot peak.

climbed peaks which dominate the southeastern approaches to McKinley. The ascent of these and, of course, the attack on the great southeastern ridges of McKinley itself, will surely tempt other parties into the Ruth Amphitheater again soon—as will the superb rock-climbs of the half-dozen virgin peaks which dramatically flank the Great Gorge.

This region is not only easily accessible by air (ski-plane) from Talkeetna, only 50 miles to the south, but not one of these peaks is in Mount McKinley National Park, thus eliminating the necessity of the formal permission and prohibition of airplane landings required by the National Park Service in connection with ascents of all of the other major peaks of the McKinley Massif. The ease of approach and relatively low cost of an expedition to this area must, however, be viewed in proper perspective, as all of the major unclimbed peaks and ridges rising out of the Great Amphitheater of the Ruth Glacier range from difficult to extremely difficult and should not be attempted by any but the most experienced parties.

It would be hard to find a spot more easy of access where glorious glacier walks, easy lower climbs, and magnificent major ascents can all be accomplished out of the same air-supplied base camp, set amid North America's finest scenery and hardly a day's travel from New York!

Summary of Statistics

AREA: Great Amphitheater of Ruth Glacier, southeast of Mt. McKinley, Alaska.

SCIENTIFIC PROGRAM: Completion of McKinley area map.

ASCENT: "Mt. Dickey," 9,550 feet, first ascent, April 9, 1955.

PERSONNEL: Leader, Bradford Washburn; David Fisher, Carlton P. Fuller, George P. Gardner, Jr., Richard T. Kleber.

The Sikkim Himalaya

ROBERT H. T. DODSON

SIKKIM is a tiny, semi-autonomous state, ruled by a Maharajah and enclosing within its borders some of the highest and most spectacular parts of the Himalaya. It is a rectangle, approximately 60 miles from north to south and 45 miles from east to west. It is sandwiched between Nepal, India, Bhutan, and Tibet, with half of its entire perimeter forming a frontier with Tibet. As the government of Sikkim is virtually controlled from New Delhi, Sikkim can be regarded as a finger of India projecting into Tibet and forming a corridor between Nepal and Bhutan.

Sikkim is a topographic entity, consisting entirely of the headwaters basin of the Tista River, which is a tributary of the Ganges. On the west, north, and east, Sikkim's frontier coincides with the watershed of the Tista. On the south, a boundary formed by British decree follows the banks of two of the Tista tributaries, flowing east and west from the watershed to the Tista. The southern half of Sikkim is rugged hill country. The Great Himalaya Range runs across the northern half. The Sikkim Himalaya is very exposed to the monsoon, with two exceptions: the northwest and northeast corners. The former is called Lhonak, a semi-arid valley exposed only to weak and intermittent monsoon influences. The northeast corner is even more arid. It is plateau country similar to the Tibetan plain, and like Tibet, practically free of the monsoon. Except for these two corners, subalpine Sikkim is a land of rainy gorges covered with jungle.

Culturally, socially, and racially, Sikkim is Sino-Tibetan and not Indian. The religion is Buddhist; the architecture is Chinese; and the people (Lepchas, Bhutias, etc.) resemble Tibetans. In the north they are nomads and yakherders; in the south, rice and fruit farmers.

The great peaks of Sikkim lie in five areas:

1) The southern approaches to Kangchenjunga, in west Sikkim near the Nepal border.
2) The Zemu region, just northeast and east of Kangchenjunga.
3) The Kangchenjunga massif.
4) Lhonak, in the northwest corner of Sikkim.
5) The Tibet-like country of Northeast Sikkim.

Areas (1), (2), and (3) are exposed to the full force of the monsoon, and their peaks are therefore blanketed in snow and ice. Lhonak and Northeast Sikkim are sunnier and drier places, with more exposed rock at high altitudes.

In degree of difficulty, Sikkim peaks in all areas except the northeast are comparable with the Himalayan average. However, the peaks of Northeast Sikkim are less difficult, for their height, than the Himalayan mean. A case apart, of course, is Kangchenjunga.

The Sikkim Himalaya has been frequently visited. Of 54 peaks attempted only 10 have not been climbed. But in addition, there are probably another 10 to 20 unclimbed and unnamed peaks in Sikkim over 18,000 feet which have never been attempted. However, most of this latter category is of relatively little interest, being for the most part outliers and high points in the ridges of peaks already listed.

A unique feature of mountaineering history in Sikkim is that about 80 per cent of it took part between 1929 and 1939. Almost nothing has been done since then. In the 1930's, Sikkim was a highly developed Himalayan playground of British India. Reasons for the great influx of climbers were several: proximity to the resort of Darjeeling; proximity to Calcutta; the attraction of Kangchenjunga, showpiece of the Himalayas, visible in all its glory from Darjeeling; and a system of well-kept and strategically placed bungalows along excellent foot-trails which permitted the traveler to penetrate the Himalaya in comparative luxury. Climbing and exploration in the Sikkim Himalaya in the thirties was almost equally divided between German expeditions, and small British parties composed of Indian employees on leave. Most of the climbing on Kangchenjunga and in the Zemu area has been done by Germans, in the other three areas by the British.

The most well-known peaks of Sikkim are: Kangchenjunga (28,146 feet), the world's third highest summit; Siniolchu (22,620 feet) in the Zemu valley, a spectacular spire called by Douglas Freshfield ". . . probably the most beautiful mountain in the world"; the Jonsong Peak (24,304 feet) in the northwest corner; and Pauhunri (23,380 feet) in the northeast. The last mentioned offers one of the easiest climbs above 23,000 feet in the world.

There are at least five reasons for postwar inactivity in Sikkim:

1) Kangchenjunga, the main attraction, had proved such a formidable obstacle to previous expeditions that no one would consider attacking it while other Himalayan "Eight-Thousanders" remained unclimbed.

2) So many of Sikkim's peaks had been climbed that not much virgin territory remained.

3) Those climbers most interested in Sikkim—the Germans—were prevented from returning by the exigencies of postwar recuperation.

4) Indian independence sapped away the adventurers, mountaineers, and athletic types from the British community in India, leaving a residue of passive individuals content to simmer in the heat of the plains.

5) Starting in 1949 and culminating in 1952, the Indian Government restricted the number and extent of permits to foreigners to visit Sikkim. This is undoubtedly due to Tibetan proximity: the fact that Sikkim's capital town of Gangtok lies on the Lhasa trade route, and that one of China's principal military bases in Tibet is at Yatung, only six miles from the Sikkim border. In 1952 the curtain was drawn completely for foreigners, across all of high-altitude Sikkim except for an area south of Kangchenjunga which includes only a few peaks. This writer and his companions were the last foreigners to be allowed into the now-forbidden area, in October 1952. Only two ascents of Sikkim peaks have been made since that time (Kabru—second ascent, and Kangchenjunga), and both were climbed from their Nepal sides. However, if relaxation of East-West tension continues, it is likely that Sikkim will be opened once again to foreign mountaineers.

If so, a Sikkim expedition would have much to offer. The foothill country and its people are delightful. Travel is relatively luxurious, due to bungalows at the lower levels, and the scenery is spectacular, even by Himalayan standards. Douglas Freshfield found in Sikkim ". . . the most beautiful mountain in the world." It was Dr. Kellas, the Sikkim climber, who called mountaineering ". . . the most philosophical sport in the world." Sir John Hunt has made a word synthesis of Freshfield's beauty and Kellas' philosophy: Reminiscing in 1950, he recalled his impressions of a climb in 1937 when he stood, as this writer has done after him, and watched ". . . incredibly far below, the great ice stream of the Zemu twisting toward the mist-filled glens of Sikkim": —"What do I remember now, as I think back across the gap of 13 years to those moments of great living in a distant land? —I remember the stillness and the majesty of the scene, I remember the wind—, I remember clinging for dear life with ice-axe and crampons—, I remember pausing on an immense white slope—, But I remember most, and shall ever evoke, that sense of peace, transcending human care and the violence of the wind, which reigns in those lonely places. A peace whose element is Beauty, raising the spirit of man above his baser self toward the Eternal."

Kangchenjunga

CHARLES EVANS

FEW great Himalayan peaks are climbed at the first attempt and without much preliminary exploration. Kangchenjunga is no exception, for as long ago as 1899 Freshfield, the first European to make a circuit of the mountain, described as a possible line the route taken by us in 1955.

The summit, 28,146 feet high, is the center and highest point of a great cross which juts to the south from the main Himalayan chain. Its four ridges run north, south, east, and west, each of them a range of high mountains. Between the ridges are four faces: the northeast overlooks the Zemu glacier and the northwest the Kangchenjunga glacier; the southeast overlooks the Talung glacier and the southwest the Yalung glacier. It was the northeast spur on the Zemu face that Paul Bauer's Munich team climbed in 1929 and 1931, in the latter year reaching a height of over 25,000 feet before turning to fight its way down through storm; it was to the northwest face that Dyhrenfurth went in 1930, when the Sherpa Chettan lost his life in an ice-avalanche which swept the lower part of the route; the Talung face is untouched and by present-day standards seems formidable; we went to the Yalung face.

This face was in 1905 the scene of the first expedition to attempt Kangchenjunga, an expedition which ended in disaster, when a Swiss, Alexis Pache, and three porters were killed in an avalanche of snow. Pache was buried at the foot of the face, and the Yalung valley was then neglected until 1953, when John Kempe and Gilmour Lewis, who went there to climb Kabru, were struck with the possibility that here there might after all be a route to Kangchenjunga. They returned in 1954 with a larger party to make a thorough reconnaissance, and it was as a result of their report that the Alpine Club set up the Kangchenjunga Committee under the chairmanship of Sir John Hunt to launch a further expedition. The Royal Geographical Society was asked to join in the project, and His Royal Highness The Duke of Edinburgh graciously consented to be the expedition's patron.

The Yalung face is more than 10,000 feet high. The most conspicuous landmark on it is the Great Shelf, a hanging glacier about a quarter of a mile wide and nearly a mile long. It is tilted outwards: the lowest, southerly, part of its outer edge is at 23,500 feet and the highest,

northerly, part of its inner edge is at 25,500 feet. Above the Shelf, toward the mountain's west ridge, a steep ledge rises, the Gangway, which lies immediately to the east of a prominent rock cirque known as the Sickle. From the southerly two-thirds of the outer edge of the Shelf sheer cliffs fall for five thousand feet to the floor of the valley; from the outer edge of its northerly third the ice of the Shelf flows down as a great icefall divided in two parts, the Upper Icefall, from 23,500 to 20,400 feet, and the Lower Icefall, from 20,400 feet to the valley floor at about 17,500 feet. The Lower Icefall is flanked by two prominent rock buttresses: to the east Kempe's Buttress, the top of which is at 19,500 feet; and to the west the Western Buttress, the top of which, at 20,500 feet, we called the Hump.

A study of Kempe's report led me to think that his buttress was the only weakness in the lower part of this huge face, and when we went to the mountain our first aim was to force a way from Kempe's Buttress to the Plateau. Above the Plateau, we thought that we would not encounter any comparable difficulty until we were near the top of the Upper Icefall, and after that not until we were higher than the Great Shelf.

We were a party of nine, and had begun to know each other before leaving England. In age, build, and experience we were all different: the oldest was forty-two, the youngest twenty-four; some were skilled rock-climbers, and some experienced in ice work; some were tall and some short; some light in weight and some, at least at the start of the expedition, heavyweights. At the present stage of the development of Himalayan climbing superlative technical skill is not of first-rate importance to success, and I had in mind, when making up the party, that in the months to come we would be living together in cramped quarters, enduring some discomfort, often tired, sometimes ill, and for the most part of the time doing the chores of a Himalayan expedition—improving the routes and escorting the porters; if we were lucky, two of us might have the chance to go somewhere near the summit. In such a case, clearly, the ideal is a close-knit group of friends.

At Darjeeling we met our Sherpas: there were twenty-six engaged for climbing on the mountain and about as many more engaged to come as porters to the base camp. In addition to Sherpas we had more than three hundred Darjeeling men to take us to the mouth of the Yalung valley, ten days' march from Darjeeling. Nearly all our Sherpas came from villages in Sola Khombu near the foot of Everest, and they had been picked for the expedition by Dawa Tenzing who was to be their *sirdar,* or head. Wise and loyal, he was also a mountaineer of experience, gifted with out-

standing ability to go strongly and fast at great altitudes: on Everest in 1953 he had twice carried loads to the South Col without oxygen. He made few mistakes in picking his men, and those of us who had been before to Sola Khombu — Band, Jackson, Hardie, Mackinnon, and I—recognized many old and trusted friends among the grinning, wild-looking faces that greeted us. Sharing with them the life on the mountain was to be one of the great pleasures of the expedition.

On April 18th we started work in earnest on the Yalung face, but our first explorations there ended in disappointment: we could find no safe route from the top of Kempe's Buttress to the Plateau. After three days' work by Hardie and Band we reached a height in the Lower Icefall of about 20,000 feet, but owing to the steepness and instability of the icefall our route there was not safe; its risks were such that though we might accept them for an occasional passage by ourselves we could not accept them for the Sherpas who would be called upon to use the route every day for several weeks. Luckily, the impasse was not complete, for from the Lower Icefall, looking up and to the west, we saw a snow gully which seemed to join the top of the Western Buttress to the Plateau; if we could reach the top of this gully, that is, the Hump, from the west, we might by-pass the icefall completely, and after all reach the Plateau. We moved our Base Camp from the foot of Kempe's Buttress to Pache's grave at the foot of the slopes on the west side of the Hump, and found that here there was a route. Camp 1 was pitched half-way to the Hump, the Hump itself was crossed, and on April 28th we pitched Camp 2 on the Plateau above the Lower Icefall.

Our method, possibly because we had a large number of Sherpas who were at home on steep snow and ice, was to build up a chain of camps, from the highest of which we could reconnoiter farther up the unknown route at the same time as the lower camps were being stocked. The line of supply from Base was kept open throughout our time on the mountain, and the daily convoys continually improved the route and made such repairs to it as the changes caused by weather and time required. For instance: Hardie and Band first crossed the Hump to the Plateau and returned to tell us that there was a way over; next day, with Joe Brown and I and four Sherpas, they crossed the Hump again, and we pitched Camp 2, lightly stocked; Brown and I stayed there to reconnoiter toward Camp 3 while the rest of the expedition began a daily ferry over the Hump to build up a stock at Camp 2. In a few days we had found a route to Camp 3 and this camp, in turn, could be lightly stocked and occupied; from it, Hardie and I made a reconnaissance to the Great Shelf and up that to the

THE NORTH RIDGE OF KANGCHENJUNGA FROM NEAR THE SUMMIT.

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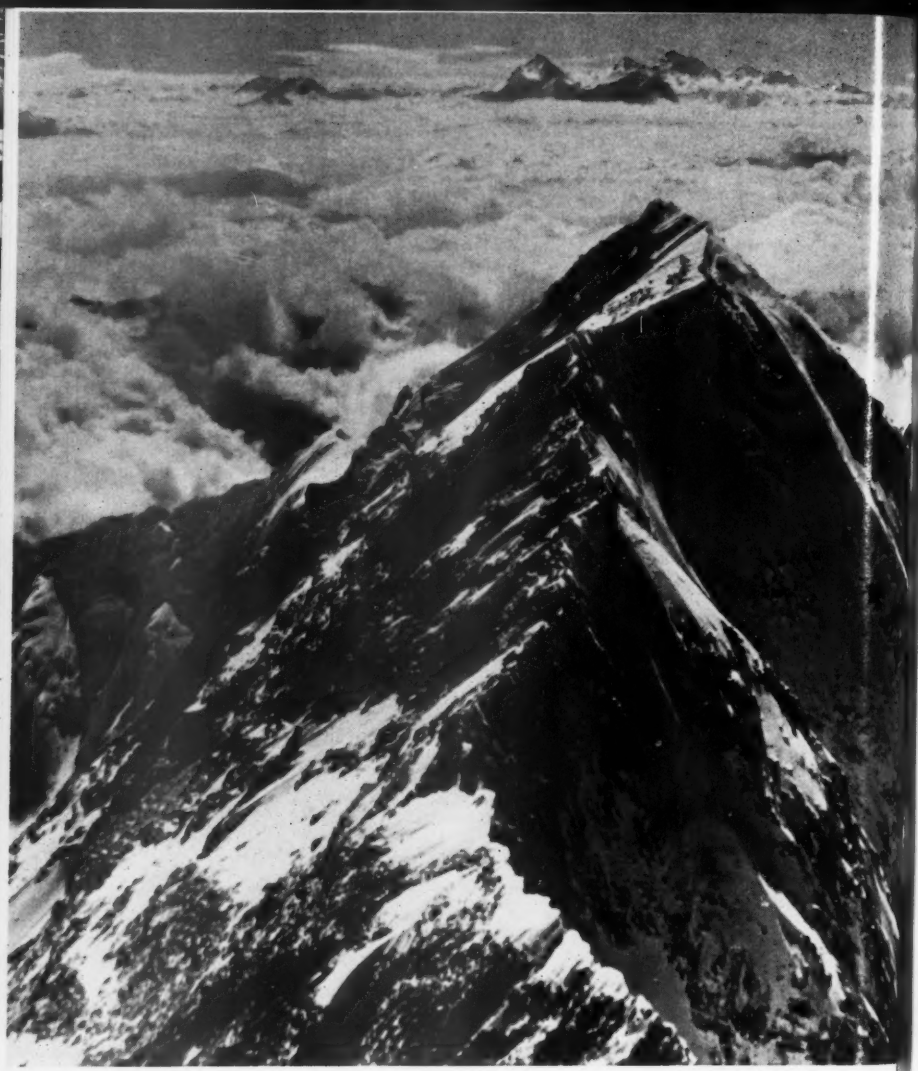
Kangchenjunga—the route

KANGCHENJUNGA (28,146 FEET)

Photograph by Indian Air Force



VIEW WESTWARD FROM NEAR THE SUMMIT OF KANGCHENJUNGA.

Makalu and Everest in distance. Copyright by Royal Geographical Society and the Alpine Club of Great Britain.

site of our future Camp 5, while a party based at Camp 2 ferried from there to Camp 3, and a larger party, still living at the Base, kept up the carry over the Hump. For our three weeks on the mountain hardly a day passed when one or two ropes of porters and climbers did not make the journey over the Hump. The usual work needed on the route was the breaking of the trail after fresh snowfall, the repair of steps that had become worn with use and warm weather, and, when they became unsafe, the replacement of snow- and ice-bridges by ladders.

By May 13th we had reconnoitered as far as 25,300 feet, where, at the upper end of the Great Shelf, we meant to put Camp 5. We now planned the final climbs.

Jackson and Mackinnon, with eleven Sherpas, would first stock Camp 5; one day behind them, the first summit pair, George Band and Joe Brown, would follow with Neil Mather, me, Dawa Tenzing and three other Sherpas; we would put Camp 6 as near 27,000 feet as possible, and leave Band and Brown there to try next day the final ridge; one or two days behind us the second summit pair, Norman Hardie and Tony Streather, would follow with two more Sherpas, either to repeat the first pair's climb if successful, or if they were unsuccessful to profit by their experience. While the two summit pairs made these highest climbs Dawa Tenzing and I would stay at Camp 5: there we could support the climbers above and be a link between them and those below.

When the time came, this plan was carried out with but few changes. Owing to illness, ten, not eleven, Sherpas carried to Camp 5; and that day Jackson and Mackinnon themselves each carried forty-pound loads. Jackson was snow-blind, and the going on the Shelf was heavy because of recent snowfall, but they reached 25,300 feet, and that night we all met at Camp 4, we on the way up, and they coming down. It was May 19th.

For the next two days we were storm-bound, but on the morning of May 22nd we were able to start for Camp 5. We reached it to find that some of the stores brought up had been carried away in a new-snow avalanche; we recovered most of the gear but were now short of oxygen for the final climbs, and when Hardie and Streather came up two days later they had to bring their own. On May 24th Camp 6 was pitched at 26,900 feet near the top of the Gangway on a narrow ledge carved out of a forty-five degree snow-slope; the outer edge of the tent overhung the slope by six inches. Here Band and Brown settled down for an uneasy night after drawing lots for the outside berth; they secured themselves against accident to the tent by passing the rope from their waists through the door to a spike belay on some rocks nearby.

In the morning they started a little after eight o'clock and followed a route tentatively chosen earlier when they had examined the last slopes through binoculars from Base Camp. They climbed at first directly up the Gangway toward the col between Kangchenjunga and Kangchenjunga West, then, after a few hundred feet, began to traverse up and to their right, over the southwest face. Sometimes they were on rock, but more often on snow or ice. The snow, as is the rule on south-facing slopes in this part of the Himalaya, was good: firm, but not hard; but when at last they reached the west ridge above a prominent cluster of rock pinnacles about three hundred feet from the summit, it was two in the afternoon. At their feet the north flank of the ridge plunged to the Kangchenjunga glacier. They were late, and after a short rest, their first that day, they plodded on. In less than an hour they had reached the foot of a rock tower, the highest prominent step of the ridge; they skirted it on the south and climbed a steep and difficult twenty-foot crack; the summit was only a few yards away.

The slope ahead was of snow, and gentle; to the north, three thousand feet below, they saw the top of Bauer's northeast spur; westwards they looked over Kangchenjunga West to Makalu, Lhotse, and, eighty miles away, Everest. Honouring a promise made to the Sikkimese not to tread the top of the sacred mountain, they went no farther; they had shown that it could be climbed.

Next day Hardie and Streather followed, with variations, the same route; they found that the final crack could be avoided by a snow route on the south, and were able to complete the climb without, as the first pair had done, discarding their crampons.

These climbs were on May 25th and 26th, and the monsoon, with its currents of warm air, was not far off. We had planned to be off the mountain, whatever happened, before the end of May, when we expected the deep snow below the Hump to soften and be highly dangerous. On May 28th, two days after Hardie's and Streather's ascent, we were all down at Base.

The route had captivated us: intricate, set in surroundings of fantastic beauty and grandeur, it had led us from one problem to the next; it threaded its way securely among ice-cliffs, with dangers now on this side, now on that, but rarely menacing the route, which, for Kangchenjunga, was surprisingly safe.

In the last five years seven of the world's highest peaks have been climbed: in part it is because we have learned about life at higher altitudes from our predecessors; in part it is because each expedition to a particular

peak discovers more about the way to climb it; but in the main it is because of oxygen. On Kangchenjunga we relied on an open-circuit set in which the climber breathes a mixture of air and oxygen; it is a relatively simple and reliable apparatus, and a set and bottle which could deliver three litres of oxygen per minute for nine hours weighed only twenty-five pounds. We all, Sherpas and Europeans alike, used these sets above Camp 5, and it was because of them that we could expect twelve men to climb, as they did, to 26,900 feet. We slept, as well as climbed, with oxygen: its use at night postpones the inevitable deterioration caused by high altitude life; it lets men sleep, and it warms them, and improves their appetite and morale. If I were planning a lightly equipped expedition on which only a strictly limited supply of oxygen could be taken, I would choose to use it for sleeping rather than for climbing, believing this to be the best use to which a very small quantity can be put.

Twice again, from Darjeeling, we saw our untrodden peak. Huge, beautiful, and remote, it had moved us to struggle up; but now there was no longer an individual invitation; rather, it stood there as an embodiment of all high snows and hidden valleys, a symbol of what is always beyond.

Summary of Statistics

ASCENT: Kangchenjunga, 28,146 feet, first ascent, May 25 and May 26, 1955.

PERSONNEL: Dr. Charles Evans, Leader; George Band, Joe Brown, Dr. John Clegg, Norman Hardie, John Jackson, Tom Mackinnon, Neil Mather, and Tony Streather.

Exploring in the Karakoram

HENRY S. FRANCIS, JR.

AMERICAN Himalayan expeditions that are not set upon climbing a single major peak of the range are still a novelty in the Karakorams of Pakistan. In fact, an expedition from any country that is not laying siege to an 8,000'er has to answer many questions from officials they meet and the porters they hire as to just what they are doing. So the seven members of the Harvard Mountaineering Club 1955 Karakoram Expedition discovered this past summer. But now with the expedition three months home, we are all convinced, at least among ourselves, of the pleasures and value of a small party with no other goal but good climbing, good company, and good adventure.

We were an expedition of friends who had enjoyed previous mountaineering together. Frederick Dunn, John Noxon, John Humphreys, and I had climbed on and around Mt. McKinley in Alaska. Arthur Read and Craig Merrihue had joined us on subsequent expeditions into the Selkirks. This was our climbing team, and it included our doctor, Fred Dunn; our surveyor and photographer, John Noxon; and our supply officer, John Humphreys. All major expeditions need much good luck, and we had more than our fair share this past summer. It began in the choice of three additional members to our party, each of whom became a close and trusted friend. Dr. Grady Webster and Eugene Nasir from Pakistan joined us as a botanical team, while the Pakistan Army gave to us Lieutenant N. A. Soofi as liaison and transport officer. "Soof," as we called him, became the mainstay of the expedition as soon as we were faced with the hiring and handling of native porters, without whom an expedition gets no farther than the airfield at Skardu. We knew "Soof" two days before we faced our first porters, and on the third evening he was a much sought-after and admired member of the party.

It was Dr. Charles Houston who persuaded us that such an expedition for a college climbing club was possible, and it was he who set us off in the right direction and aided us in getting our permission. Bob Bates finally helped us out of the dilemma about where we could go by suggesting that we look into the literature on the Hushe Valley and gave us a copy of Waller's *The Everlasting Hills*. We discovered that on two previous occasions the valley had been entered by expeditions: the Workman's Expedition in 1911 and Waller on his Masherbrum attempt in 1938. We

also found out that the New Zealanders were heading there this year to attempt the Masherbrum. In our correspondence with them they told us that they were not intending to concentrate on the eastern end of the Hushe Valley, which includes the Ghondakoro and Chogoliza Glaciers. The Workman's had explored well into the Ghondakoro, but the easternmost portion of the Chogoliza Glacier was still unexplored and presented a real call to those of us who like exploring new glaciers and their peaks.

We decided not to attempt a major peak, but instead committed the expedition to a scientific program. This included a botanical study of the area, a physiological experiment, and the surveying and exploring of possible passes that might lie to the north on the Baltoro rim.

We equipped the expedition on the basis of the worst conditions any of us knew, Mt. McKinley, and discovered as the summer progressed that we were overequipped in clothing and heavy gear. Our food supplies were assembled on the basis of our Alaska climbing and on the experience of the 1953 K2 party. In this, also, we again prepared for much more severe cold and wind than we ever experienced and found that our diet was not the best for the heat and dryness of the lower mountains. We were again lucky in having most of the expedition assembled in one place during that trying period of preparation; Arthur Read, however, was in England, where he could buy time-tested English equipment for reasonable sums of money. Fortunately, I could devote most of a year to the administrative work involved with permission, sponsorship, fund raising, and logistics. It was our ability to decide questions quickly and work out details together that accounted for much of the success of the venture and prevented the development of many possible misunderstandings. This fact combined with the tolerance and understanding of each other's point of view gained through long mountaineering companionships accounted almost wholly for the ease with which this expedition progressed.

Our permission came through on December 1, 1954. On May 19, 1955, I found myself on Pan American's Rainbow Flight to the Orient, much to my own surprise, as well as that of my friends. By the middle of June we were all assembled in a bungalow on the campus of Gordon College in Rawalpindi. All our gear was intact and our party healthy. Despite the heat we were enjoying our days in Rawalpindi as we sorted our gear and checked the food for heat damage, and purchased the remaining items of needed equipment. By the time we were notified that our plane would take off for Skardu, we had come to know Eugene Nasir, our second botanist, and we had had several good talks with Lieutenant Soofi. The pool of the 'Pindi Club had seen several frantic games of water polo and

the President of Gordon College and his wife, Dr. and Mrs. Cummings, had thrown a farewell party for us, at which the expedition members were badly beaten at badminton by our Pakistan friends.

We were all thankful to touch down at the airstrip at Skardu, after having seen the upper portions of Nanga Parbat, Rakaposhi, and Haramash at close range, seemingly scraping our wing tips as we flew northeast up the Karon Valley to the Indus Gorge. By the first night, we had hired and paid off our first train of porters, taken over the very pleasant facilities of Skardu House, given to us by the Political Agent, and were beginning to feel like old hands at the game. But five days of repacking and negotiating for porters made us doubt this a bit, and when faced with 60 porters and 30 ponies strung out in a shouting, braying herd on the road up the Indus to Ghol, we all decided that there was still much to be understood before we might be called experienced in these matters.

The march up the Indus and Shyok Rivers to the Hushe Valley gave us the confidence in handling the porters that we had lacked, and the party was developing into a working team. Things began very shortly to become routine as we were able to pack up the expedition at a reasonable hour each morning in the compounds of the Dak Bungalows. Our start was always enjoyed by the assembled villagers as we headed out through the rich irrigated fields of wheat and barley, past astonished children and silent working women, to the barren sandy areas that extend all along these rivers, except where broken by green patches of cultivation. Eight to 12 miles farther on we would come into another town, differing from the last only by small details, but with a character of its own, distinct enough to place it in our memories. Fred Dunn would seize his medical box, and he and Lt. Soofi would begin sick call, while the necessary wood, chickens and ata were bartered for with the local Teshildar. Dinner would usually be cooling by the time Fred was done, and we would turn in very shortly thereafter with our high porters sleeping around our boxes and ourselves a little distance away. Only once did real confusion interrupt the normal routine. We met the Canterberry Mountaineering Club Masherbrum Expedition from New Zealand returning from their attempt. The village of Doghani witnessed the spectacle of the century with 200 porters, 30 ponies and drivers, and 25 Sahibs all milling about in the compound of the bungalow, with piles of boxes and duffles littering the area. In the morning it took us four hours to hire the New Zealanders' porters; they, our ponies. Perhaps this was due to the previous gay evening over a pot of reinforced tea, but I think much more attributable to the endless taking of pictures. It was wonderful to meet half way between our homes in such

a distant place, and I don't think any of us will soon forget the occasion.

Two days from Base Camp we enjoyed our first real view of the Karakoram. Masherbrum and the surrounding peaks appeared at the head of the valley just as we came into the town of Kande. With two easy stages left, we strolled through Hushe and on to Base Camp at the junctions of the Ghondakoro and Chogoliza Glaciers. Base Camp was placed in a clump of willow trees on the northeast edge of the gravel flats at the confluence of the two glacial streams. We paid off the "thundering herd" of porters and began looking around to see what was next.

After a short reconnaissance into the Chogoliza Basin, we decided that the Ghondakoro was a much less forbidding venture. As our botanical team combed the high meadows for alpine plants, we moved camp nine miles up the Ghondakoro to the last yakherders' village of Dalsangpa at 14,000 feet and prepared to explore the glacier that leads down from Masherbrum and Sérac Peak, which we called the "East Masherbrum Glacier." Here was a smaller peak of 20,000 feet, "Objective Peak," that seemed from below to offer a reasonable route to its summit. Already we were impressed by the sheerness of the mountains in this area. The top 2,000 feet seemed quite climbable, but the bottom 5,000 were vertical; and although the glaciers in this area are sizable, they don't gain much altitude and lead *into* the mountains but not *up*. However, in our favor was the weather, which was improving daily. Just as we were about to move up to Camp 2 (17,000 feet) on the East Masherbrum Glacier, Arthur Read developed the first symptoms of pneumonia. Fred Dunn and I stayed very near to camp for the next three days watching every twitch and wiggle that Arthur made. Fortunately penicillin did its job. We were entertained throughout this period by notes from our botanical team at Base Camp. We had given instructions that we were to be supplied regularly with eggs. Our botanists took this so literally that at one time we had 14 dozen of them and four chickens, one of which proceeded to lay just one more egg as I was doing my best to reduce the supply by making a 12-egg nog. We boiled that chicken for dinner.

With Arthur recovering rapidly, we moved camp to 17,000 feet. One day's reconnaissance showed us that with the beautiful cloudless days we were having, our route up this peak was not a safe one. The route to the summit lay up a steep snow buttress to a steep and corniced ridge off which a quantity of snow was beginning to slide. We satisfied ourselves with a fine view east up the Ghondakoro across to Gasherbrum I (Hidden Peak, 26,660 feet), and then headed down to finish off the remaining eggs, still cooling in a stream at Camp 1.

While the party climbed a small rock pinnacle called "Katrina" (18,000 feet) from which they had a unique view of Masherbrum, the surveying team finished off the stations at the bend in the Ghondakoro Glacier. We packed up camp and headed east to a small gravel island between two lateral moraines which were formed by the confluence of the East and the North Branch of the Ghondakoro. At this point, about 16,000 feet, we sent our porters to Base Camp and set off to explore the surrounding glaciers. A brief snowstorm, the last we had until the middle of August, delayed us for a day, but we soon had dried out and climbed a further rock tower "Khanjar" (18,500 feet), and two snow peaks, "Takiya" (19,000 feet), and "Khaima" (20,000 feet). We were so far disappointed, however, in our inability to find either a pass across to the Vigne Glacier, or even a summit from which we could see the entire Karakoram massif.

From "Khaima" we had seen Gasherbrum I and to the south of it, Bride Peak (25,110 feet). Bride Peak was a very attractive-looking mountain, and we could see up the Vigne Glacier to the mountain's upper slopes. Except for an icefall on the upper Vigne, which was hidden by an intervening ridge, the approach and climb up Bride from this side do not look impossible. Fred Dunn and John Humphreys had to retire to Base Camp at this moment to re-equip our botanical team, which was leaving for the Nanga Parbat area but rejoining us at Skardu in late August. The remaining four of us packed up camp and moved it to 17,500 feet, to a moraine ridge near a glacial pond from which we hoped to try a peak farther north.

On the 25th of July we had a sensational day. An easy climb was complicated by 40 pounds of camera gear and several unexpected rock towers on our ridge. A 1,000-foot snow slope above this almost finished us off late in the afternoon as we dragged ourselves up through soft drifts. I was about to quit, hopelessly buried to my waist, when I looked back over my shoulder. As if it were on top of us, K2 loomed up with only a thin thread of cloud across its face. This so stimulated all of us that we rushed to the summit of Jharokha (20,500 feet). K2, Broad Peak (24,680 feet), Gasherbrum I–IV lay to the north and east. Bride Peak was to our south and Masherbrum to the west, the sun already setting behind its summit. There was no wind and very little cloud and a breathtaking sight. We did not leave the top until almost 7 P.M. Fortunately the slopes leading off from the ridge, which had been dangerously soft in the day, were now solid, and we quickly returned to the glacier stumbling into camp by moonlight after the most exciting day that I have ever spent in the mountains. Two days later we were in Base Camp enjoying a special goat curry prepared by "Soof."

North from the "Objective Peak" camp. The Baltoro Glacier lies beyond the peaks.

PHOTOGRAPHS BY JOHN NOXON

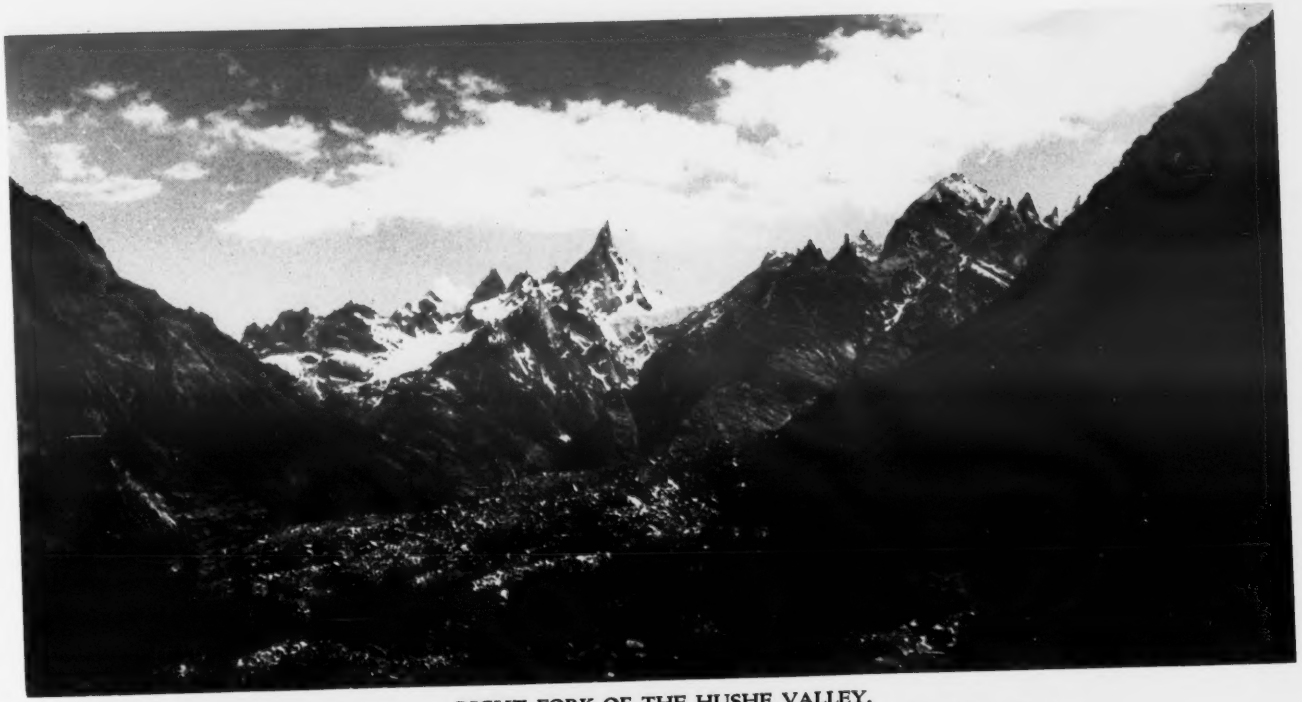
Harvard Karakoram Expedition · 1955

"EAST MASHERBRUM GLACIER" FROM ABOVE GHONDOKORO CAMP I. Sérac Peak (23,500 feet, center) and south summit of Masherbrum just over right-hand ridge.

SUBSEQUENT PEAK — 10,200 FEET — FROM ABOVE 8,000 FEET ON THE SOUTHWEST GLACIER.

"CONSECTIVE PEAKS" 25,300 FEET) FROM ABOVE GHONDOKORO GLACIER.

Gasherbrum Peaks—I, II, III, and IV (Hidden Peak).



RIGHT FORK OF THE HUSHE VALLEY.
Base Camp lay below the spiked peak at the junction of the Chogolisa and Ghondokoro Glaciers.

K6 (23,890 FEET) FROM CHOGOLISA GLACIER CAMP II.

KA
fro

MOUNTAIN PEOPLE. (Four Photographs) →

KÁNAS PEAK (22,156 feet)
from 19,000 feet.

UNNAMED PEAK *(CA.* 22,000 FEET)
from the icefall route to Thanda Parbat.

We spent the first three weeks of August exploring the Chogoliza Basin. Again in a series of four camps above Base Camp (11,500 feet), we moved into position to attempt a peak of 21,500 feet, which we called Thanda Parbat, the frigid mountain, with our highest camp at 18,500 feet on the southern extension of the Chogoliza Glacier. The surrounding mountains became more vertical than ever, and the scenery was filled with the rock towers that are characteristic of the Saltoro area in the Southeastern Karakoram. In the midst of this barrenness we were wonderfully lucky, for three of our four camps had fresh water, grass, and flowers. Exploration discovered for us a break in the tremendous wall of this basin; a glacier leading to the south on which we could gain an approach to this climbable looking peak. From a camp at 18,500 feet all seven of us laid siege.

Our weather was beginning to deteriorate, and K6 (23,840 feet) and K7 (22,480 feet) were shrouded in misty white clouds. The day we explored into the col through some crevasses to 19,000 feet it was snowing: silent, heavy, wet, soggy snow. The weather cleared long enough the next day to allow three of us to get well entangled on an ice face before the snow returned, and then we had to back off fixing hand lines and pitons all along the route. On the 18th of August four of us made a try for the summit. We were beaten back by our previously good summer weather. The sun of the preceding three weeks had melted the snow off the ridge, exposing the ice below. We cut steps to 21,000 feet and at 4 P.M. in the afternoon decided to turn back. We pulled back to Camp 2 the next day to rest, and that night the monsoon hit us. In the steady rainstorm we evacuated all camps back to Base Camp and sat under our shelters listening to our radio and repacking our gear for the trip back down the Hushe Valley through the now ripe apricot orchards to the Shyok and Indus valleys and Skardu, 100 miles away.

Summary of Statistics

AREA: Hushe Valley, Karakoram, Pakistan.

SCIENTIFIC PROGRAM: Botanical collections; surveying and exploring.

ASCENTS: "Katrina," *ca.* 18,000 feet; "Khanjar," *ca.* 18,000 feet; "Takiya," *ca.* 19,000 feet; "Khaima," *ca.* 20,000 feet; "Jharokha," *ca.* 20,500 feet, July 25, 1955.

PERSONNEL: Frederick Dunn, Henry S. Francis, Jr., John Humphreys, Craig Merrihue, John Noxon, Arthur Read, Lt. N. A. Soofi, Grady Webster, Eugene Nasir.

The Ascent of Istor-o-Nal

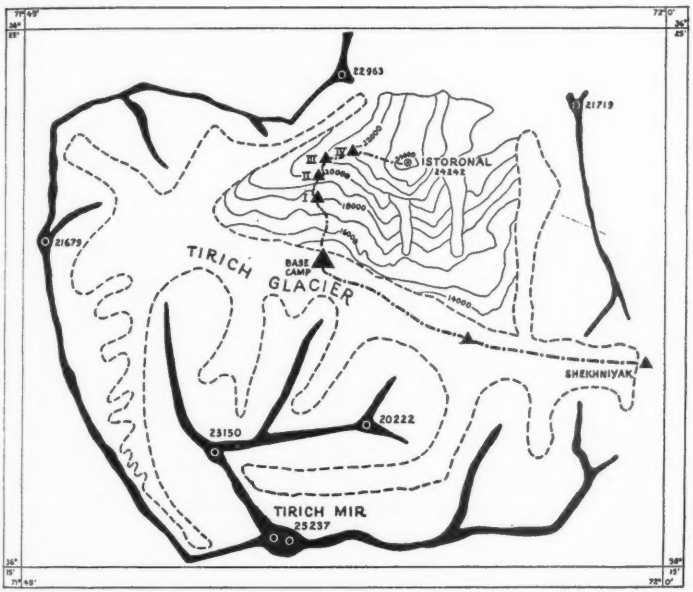
JOSEPH E. MURPHY, JR.

THE Princeton Mountaineering Club Expedition to Chitral, West Pakistan, and the ascent of Istor-o-Nal resulted from Thomas A. Mutch's facetious suggestion that he and I make our next trip to the Himalaya. At the time, Tim and I were sitting on the bank of a river in the Coast Range of British Columbia on an earlier Princeton Mountaineering Club trip. When the idea of a Himalayan venture first occurred, we considered it an impossible dream, for we had neither the capital nor the experience necessary to undertake the enterprise. But the "impossible" is always intriguing and we kept the idea of a future expedition in the back of our minds with a tentative date set for the Spring following our completion of military service, June 1955. It would be an opportune time since neither of us would be tied down by the demands of business or marriage, circumstances which generally preclude the chance to join an expedition.

During the next two and one-half years, plans progressed and letters accumulated. Choosing a suitable climbing area for a small party, selecting the right equipment, getting permission to enter the mountains, obtaining my release from the Army in Japan—all took time. We consulted men who had been to the Himalaya, studied books and journals, ordered from equipment catalogs, and contacted the State Department and foreign embassies. We planned on spending what we could pool from our Army savings: $5,000, a fraction of the cost of most larger expeditions. Soon, high-altitude tents arrived from England, Prima stoves from Sweden, light "mummy" down sleeping bags from California; each item selected after much deliberation. Negotiations for permission to climb, the most uncertain factor, dragged on for over a year. India was closed. The report from Nepal was unfavorable. Pakistan gave vague assurances that we would receive authorization. When Tim sailed, permission still had not been granted.

Forty days after his departure Tim met in Karachi the one man who could grant permission, Dr. Imdad Husain, and eventually got the permit. An American Embassy official was amazed at this, as he thought it would take months. Getting permission to climb was not the last problem to confront Tim, for at the unloading dock seven crates of equipment nearly

disappeared into a train, when Tim, seeing the familiar baggage being hoisted away, stopped the disastrous operation. From the docks, the equipment was taken to the customs office and a prohibitive tariff was assessed on our equipment. Three days later, however, the Treasury Department issued a license canceling the duty, which allowed Tim to shuttle the supplies off to the station and the train for Lahore.



In Lahore, with the invaluable help of the Reverend R. M. Ewing, President of Forman College, Tim assembled the equipment and awaited my arrival. In the meantime, the Pakistan Government was most generous in assigning Major Ken Bankwala of the Infantry School to our expedition as liaison officer. On the 7th of May I arrived by plane from Japan, and the next day we left by train for Chitral on the border of Afghanistan, later traveling by bus and ultimately on foot.

Since the State of Chitral is hemmed in by mountains we entered the district from the south over 10,000-foot Lawrie Pass. On the 11th of May, just below the pass, a snowstorm forced us to find shelter, which we discovered around the next bend in the form of a "hotel"; a small mud hut where Tim, Ken and I, 10 porters, and 12 donkeys spent the night. Early

next morning we trudged through the snow on the pass and hiked down to a nearby fort along a steep, winding road. Traffic along the narrow road was heavy with coolies and burros carrying wood and grain to Dir and staples back into Chitral. At the fort we hired a jeep to take us to the main post at Drosh, where we watched a wildly played polo match. We spent a night there and then continued driving north until we reached the town of Chitral with its bustling market and Royal Palace set beneath the giant white dome of Tirich Mir.

The next three days we spent in Chitral, where we attended dinners, visited a nearby mining operation, played tennis and, when we were given the chance, sorted and repacked our food and equipment into four-man day and 80-pound loads. In response to a call for porters, 34 hardy coolies appeared one morning and lined up in one long, uneven rank. Ken and I inspected the line to select the 10 strongest men, though if they were the best, it was by luck, for a man's looks give little indication of his endurance. The agreement on wages had met with our stipulation that they be no more than the local rate, and the porters seemed happy. By the evening of the 15th our arrangements had been completed. After drinking three bottles of homemade wine offered by one of the Princes as a farewell gesture, we felt slightly out of condition. Nevertheless, we planned to depart for the mountains early on the 16th.

When the sun penetrated the morning mist, Tim, Ken, and I shouldered our 30-pound packs while the porters readied their 80-pound loads for the march. For five days we walked up a long, winding valley with its sharp contrast of green vegetation and hot, barren desert. We spent the nights at village guest houses and stopped for lunch at small tea shops along the way. Fifty miles from the town of Chitral, beyond snow-laden Zani Pass (12,800 feet), in a cluster of weather-beaten dwellings called Souche, additional porters carrying ata (roughly ground wheat) joined the party. We filed out of Souche on the 24th with 18 porters and turned west toward the Lower Tirich Glacier, establishing camp three days later at 13,000 feet in a driving snowstorm. Soaked to the skin by the wet snow and tired by the long, difficult march, the coolies balked for the first time—the tough Chitralis who had vowed they would go to the top wanted to return home. Only our faithful cook, Gulnawaz, wished to go on.

The next day was clear, and with it came renewed optimism. We needed five volunteers, and as many stepped forward, willing to continue. On the 29th we placed Base Camp at 15,000 feet on the main glacier below a large couloir. We could easily see the route used by the two previous attempts. Camp I was pitched two days later on the crest of a minor ridge

at 18,500 feet. The ascent to Camp I was a long snow climb across the rough debris of an old avalanche, several city blocks in area, and then up the steep, narrow couloir.

From Camp I, Tim and I started out to make a reconnaissance for the next site. Beyond a treacherous couloir rose a short but steep ice pitch. I began cutting steps in the blue ice, and the chips flaked out and down past Tim and the three porters. It looked as though it would take several hours to cut our way to the top until we found a vertical crack several inches wide in the ice face. It led diagonally toward the top. Notching ladderlike steps on the edge of the crack was easier, and within an hour I had struggled over the brim into soft snow. Tim came up and brought the porters up on belay. Shortly before noon we selected a site for Camp II on a large snowfield at about 20,000 feet.

We descended to Camp I by an alternate route through a dense fog and met Ken, who had brought up more supplies with the other two porters. Our plan to occupy the new site the next day, June 1, was altered when the porters refused to budge from their tent. Headaches, lack of appetite, and superstition kept them to their sleeping bags while Tim and I, restless because of the delay, puttered about camp. By noon, light storms closed in, and soon snow and wind made thoughts of going on even more impractical. For the next two days snow fell on the camp with little interruption. Intermittent winds whipped across the ridge and lashed at the tents. We stayed in our tents, wondering when the snow would cease, venturing out during the lulls to view the mountains, 20,000-foot rugged peaks of ice, rock, and snow which towered above us.

On June 4 the mists cleared, and Tim and I with three porters started up toward the new site we had selected two days before. Ken returned to Base Camp, his feet having been slightly frostbitten. Though not a serious condition, it was best that he get down to lower altitudes. Our previous tracks had been obliterated by the snowfall, and we now had to make new steps, a long and exhausting task. We reached the snowfield by 3 P.M. and could see the summit ridge above us clearly outlined against the blue sky. The porters were too exhausted to help us pitch the tents, so Tim and I packed two five-by-seven-foot platforms in the snow and erected the two tents. One porter helped for a while and then sat back in the snow with his elbows on his knees and his head in his hands like the others. The porters were suffering from the effects of high altitude, and we hoped a night's rest would bring relief.

Our plan for the next day was to find a location for Camp III and deposit two loads there. The sun was up by the time we left camp and

started for the large couloir which dropped down from the summit ridge. At the base of the couloir we encountered an ice face which took over an hour to surmount. Steps had to be cut for the entire distance. Balancing carefully, we worked our way up the steep, dark ice until we gained the top. The route up the couloir was tiring, and we alternated the lead until we reached the top at 3:30 P.M., where we deposited our loads beneath a large rock on the right side of the slightly dipping saddle. Clouds settled on the ridge. It became cold, and after a 15-minute rest, we turned back and descended along the earlier tracks to keep from getting lost in the dense fog which had enveloped the couloir. Rock buttresses loomed out of the mist and assumed grotesque shapes as we hurried downward in the eerie silence.

Early on the 6th of June we packed the remainder of our gear and struck one tent for the move to Camp III. The porters were in no condition to go on, so we sent them back to Base Camp with a note to Ken. Camp II would remain intact with one tent and could be resupplied from below by fresh porters. Then Tim and I retraced our tracks of the previous day, balanced our heavy packs to negotiate the tricky ice wall, and by noon established Camp III at 21,400 feet on the col above the couloir. The key to the summit ridge was the 300-foot rock face which rose above the col beyond Camp III. By 7 A.M. the next morning we had finished our hot chocolate and were striking the tent. We intended to pack everything but extra food to a higher camp and abandon this one. With our heavy packs we carefully traversed the narrow snow cornice for 200 yards and gained the rock. To our left the mountain dropped away suddenly, leaving 4,000 or 5,000 feet of space between the rock wall and the narrow, winding glacier below. An anchor rope, left by the previous expedition, was still visible except where it disappeared in the snow-filled openings in the rock face. Tim belayed me from the cornice while I climbed the first pitch, and then we alternated the lead, keeping to the snow whenever possible.

By the time we made the top of the rock wall, we felt cold and tired and had to rest. Beyond us the ridge rose toward the distant summit. We edged along the narrow corniced ridge several hundred yards until we came to two large boulders jutting out 100 feet below the crest. The snow was unsteady in places and the steps didn't hold well. It would take several hours to climb to another site large enough to accommodate our tent, which meant pitching camp after nightfall. We decided to place Camp IV here at 22,400 feet. To make a level platform for the tent, we dug into the snow with our ice axes and stamped out an area slightly larger than the base of our high-altitude tent. Anchored with ropes and several 10-inch tubular

aluminum stakes, it seemed sturdy enough. After we had crawled inside, Tim prepared supper, and we talked over plans for the next day, when we hoped to reach the summit. We rolled out our sleeping bags, I stuffed my boots into the bottom of my sleeping bag to thaw out the leather, and we turned in. The night was quiet and clear.

At 6:30 A.M. on June 8, after a light breakfast, Tim departed on a reconnaissance while I waited for the sun to come up to thaw out my boots, which were still stiff. Fifteen minutes later, Tim returned out of breath, almost exhausted by the intense cold. He fell asleep after entering the tent, and I waited 30 minutes before waking him. We drank another cup of hot cocoa, put on our down jackets and started up from camp, hoping to reach the summit by 1:00 P.M.

We worked our away cautiously along the crest of the ridge, for it was sheer on the left side with overhanging cornices and slanted steeply away on the right. In places the crest was less than a foot wide. Where the snow was likely to slide we made each step carefully and kept moving forward. A half mile beyond camp the narrow ridge expanded into a broad plateau which rose to what we thought might be the summit. Just below the highest visible point was where the English party had turned back in 1935. We inhaled five or six times after each step and climbing slowly, alternated the lead to share the task of breaking steps in the knee-deep snow.

It was a clear day, and we could see the twin peaks of Tirich Mir behind us and the mountains of Afghanistan to the west. To the north, the next ridge swept westward toward an unnamed 24,000-foot peak. Small gusts of snow and wind blew up from the ridge. We had hoped that Istor-o-Nal would not produce exasperating illusions in the form of false summits, but our wish was not fulfilled. The first high peak of snow proved to be a false summit. We continued climbing along the ridge. Beyond a second false summit we could see the ridge narrow and curve toward the right. Its south or inner face was precipitous, and its narrow crest rose gradually to a point and then descended. Now we were nearly certain that our goal was in sight.

Keeping below the crest of the ridge to avoid overhanging cornices, Tim moved forward slowly, breaking steps in the snow. Clouds began to drift in from the south, periodically limiting visibility. We trudged upward for some time until we finally reached three small mounds of snow. Fifty yards beyond, the ridge leveled and several hundred yards farther, it fell away. We had reached the summit, 24,242 feet above sea level.

It was 4 P.M. and quite cold. We caught only a glimpse of the distant peaks as clouds began to envelope the summit ridge. Planting our P. M. C.

flag and Ken's regimental flag, we took two photos and munched some dried fruit and nuts, hoping for a break in the weather. The margin of time remaining for the return to Camp IV was slim. At 4:15 P.M. when the clouds showed no sign of clearing, we decided that it would be risky to remain if we hoped to reach camp before nightfall.

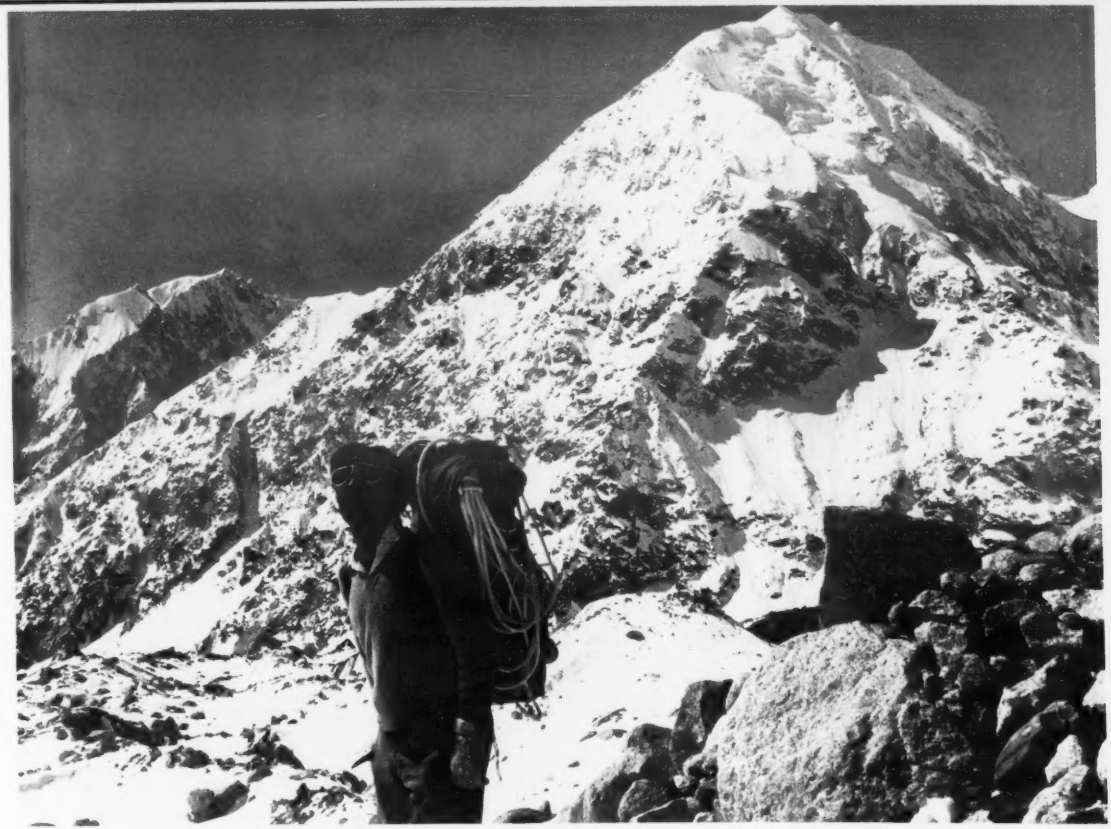
We started down, retracing our steps along the narrow summit ridge to the point where it broadened, and then we descended until we reached the steep, narrow ridge leading directly to Camp IV. This last ridge was tricky as before and seemed eternally long. As the sky cleared and the sun dipped in the west, long shadows streaked across the glacial valleys and changing shades of orange silhouetted the peaks against the pale blue sky. We moved slowly over the cornices, which in places leaned far out over the precipice, and reached camp just before sundown. We celebrated by digging into the most precious of our stores. Tim heated the soup, cocoa, and oatmeal while I started restoring the circulation in my feet, which had been frostbitten. After supper, Tim worked on the feet until 9:00 P.M., when the natural color was restored. We crawled into our sleeping bags for the night.

The next morning we didn't move until the sun came up. The day was clear and bright. I started out first with a light pack, and Tim packed up the tent and followed. It did not take long to reach Camp III, where we retrieved some of the food we had cached there two days earlier. At Camp II, we found a tin of fried chicken and hard boiled eggs sent up by the Major, which we shared with the porters who had brought them up.

The descent was long and tiring, and reaching Base Camp was like coming home after a long journey. Ken met me several hundred yards from camp and half carried me the rest of the way, though I was perfectly able to walk. The porters were full of congratulations, and it was good to see our faithful cook, Gulnawaz, again. The Chitralis were so emotional that their enthusiasm brought tears to our eyes. Tim arrived a few minutes later to a similar reception, and then we all drank hot tea and opened a bottle of brandy presented by a fellow climber to celebrate the occasion.

In order to prevent gangrene, it was necessary that I keep off my feet and be carried on a stretcher across the glacier, a rather embarrassing prospect. From the terminal moraine we could travel by horseback. Ken sent for eight more porters and arranged to have horses meet us below the glacier. Two days later we left. I was on the stretcher while the rest walked. It was a rather exciting ride, as I was tied up like a mummy in my sleeping bag and bound tightly to a makeshift frame of poles and cross-sticks. The porters carried me on their shoulders over the uneven glacier. One minute

SOUTH FROM CAMP ON TIRICH GLACIER
to unnamed peak (*ca.* 19,000 feet). By Thomas Mutch



SOUTH FROM TIRICH GLACIER TOWARD PEAK 20,222 FEET.
Major Ken Bankwala in foreground. By Thomas Mutch

I was looking at the dark ice and the next at the sky. Twelve hours later we arrived at the moraine.

Tim and I went on the next day, while Ken remained behind to hunt ibex and handle the baggage. Below Zani Pass my horse gave up, utterly exhausted, and the local villagers carried me on their backs the last 2,000 feet through rain and snowstorm over the 12,800-foot pass. On the other side, at a village called Uthul, we acquired horses and rode the next 56 miles into Chitral. We arrived on the 16th of June only to hear rumors in the form of news reports that we had been lost in a crevasse on Tirich Mir and found two days later by the porters.

On the whole, the area we visited offers many advantages to a small expedition. The country is both interesting and attractive. There are reputedly more than 100 peaks over 20,000 feet, of which only two or perhaps three have been climbed. The local inhabitants, if trained and given sufficient experience, would probably make excellent high-altitude porters. Furthermore, the State officials and the Chitrali people were extremely generous in providing assistance. In view of this, it is surprising that more expeditions have not visited Chitral.

Major Ken Bankwala in foreground. By Thomas Mutch

TRIP NOTES

FOOD: We found out, contrary to many reports, that diet does not have to be loaded down with a variety of delicacies. High altitude rations included *only* the following items: tea biscuits, mixed nuts, raisins, cocoa, and sugar and dried milk mixture, lemon powder, Ovaltine, cheese, dehydrated beef, dried soup, shortcake. Rations were packed in four-man day quantities, the most satisfactory size for us to handle.

ACCLIMITIZATION: Neither of us suffered any "altitude sickness" or unusual effects from the high altitude climbing. This was possibly due to several facts.

1. Our diet was fat-free and stressed optimum intake of water. Melting snow is always time-consuming and must be recognized as the primary cooking problem. A mixture of snow and raisins provided good snacks while climbing.

2. We kept out of the sun as much as possible and attempted to complete each day's climb by noon.

3. While we moved quickly up the mountain, we spent several weeks at altitudes over 9,000 feet. Our climbing pattern was fitted to this particular mountain. If it had been 2,000 feet higher, we would have probably discovered that we were physically over-extended, far below the summit.

EQUIPMENT: Commenting on only a few items:

1. *Boots:* Army thermal boots are excellent in all respects, much better in many ways than the best leather climbing boots.

2. *Jackets:* We used down-filled jackets made by Mr. Siminow of Camp & Trail, New York City. They were of superior construction and—of all our equipment—the most appreciated item.

3. *Porter equipment:* We had particular trouble with boots. The easiest and safest solution would have been to bring a large number of rubber thermal boots. These boots tend to fit a large number of differently shaped feet.

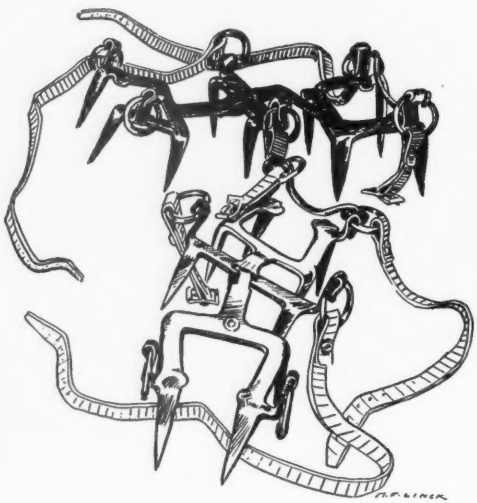
FINANCES: (For two men, approximate) $5,000:

Transportation to Pakistan and return from U.S.A.	$2,600
Travel in Pakistan (including porters)	1,100
Provisions bought in Pakistan	300
Equipment and provisions purchased in U.S.	1,000

Summary of Statistics

ASCENT: Istor-o-Nal, 24,242 feet, Chitral, West Pakistan, first ascent, June 8, 1955; second highest summit reached by an American expedition.

PERSONNEL: Major Ken Bankwala, Joseph E. Murphy, Jr., and Thomas A. Mutch.



Nilkanta, Garhwal Himalaya, 1949

WILLI UNSOELD

EARLY on the morning of July 4, 1948, two rucksack-laden hitch-hikers stood hopefully beside U.S. 66 on the outskirts of Los Angeles. Their thumbs pointed east, their axes proclaimed their membership in the mountaineering fraternity, and a crudely lettered sign announced their objective as the Swiss Alps. Surely at that early hour, with the dim lights of the fading night just beginning to reveal their shabby mountain equipment, there was little about the pair to mark them as a genuine American Himalayan Expedition. This, of course, was unfortunate, since it is likely that their thumbing would have proved much more effective had the drivers only been aware that they were flashing past the main body of what was eventually to constitute the "Anglo-American Himalayan Expedition of 1949."

Initial preparations for this trip were kept to a minimum since the possible success of the undertaking was considered much too unlikely to warrant much expenditure of energy or material during its opening phases. As Herbert Rickert of Cleveland, Ohio, whom I had known in the Army, had written to me about the plan, I was simply to get together all easily available funds, collect equipment, and meet him in Zürich.

Having once joined forces in Zürich, we were to practice a bit on the Alps and then see about getting to India. There would be time enough along the way to pick up odd bits of extra equipment, additional funds, and a specific objective. No special plans would be formulated, but from time to time we would consider where our inclinations seemed to lead and follow up those which beckoned most strongly, particularly those for which opportunities were offered.

So, toward the end of August, I met Rick in Zürich with what was left of my initial $300, a properly filled rucksack, and John Barnes (just graduated from Oregon State College in Forestry). John had "hitched over" with me for a little climbing and later stayed on in Switzerland to study the 'cello. Rick had added Harold Jaeger, another old friend, to our roster, and so for three months the four of us dragged ourselves around the Alps under the monstrous loads formed by our Himalayan equipment. Dragging along a 60-pound pack did little to enhance the attraction of a clean-cut rock climb, but we hoped that through such grinding discipline of body and spirit we would profit from the conditioning later on. This discipline

Nilkanta, from photograph by Marcel Kurz
By F. M. Linck

denied us many tempting summits available in our immediate Alpine area, but we did manage to get up, among others, the Wetterhorn, Monte Rosa, the Jungfrau, and the Matterhorn.

Weather and funds gave out simultaneously in Switzerland, driving us

north to Sweden in search of work and a ship to India. Luckily, we got a job in an iron foundry in Göteborg; however, the work proved a great incentive in expediting our search for a ship. After two months of unsuccessful inquiries, we found our way into the office of one of Göteborg's leading ship owners. The result was unexpected and magical. In four short days arrangements were completed for the transport to India, via first-class freighter accommodation, of our entire complement of personnel and equipment. The personnel had proved as fluid as our plans, with Barnes succumbing to the 'cello and Jaeger continuing work in the iron foundry. In the end it was Rick and I, with Laurie French, a young Englishman of proper spirit and stature, who finally sailed on the "Nordstjernan."

During our stay in Zürich, we had availed ourselves of the extremely cordial and capable offices of the Swiss Foundation for Alpine Research, directed by Herr Ernst Feuz, and with their help had selected our objective as Nilkanta in the Garhwal Himalaya. This 21,640-foot gem lies at the source of the Ganges, immediately above the sacred city of Badrinath. Its modest size and ease of access made it particularly suited to an expedition of our size, while its technical difficulty and perfection of form promised a rewarding engagement. Smythe had classed Nilkanta as second only to Siniolchu in Himalayan beauty, while both he and several other well-equipped parties had found its unusual rock-clad defenses too formidable to overcome.

The first-class nightmare of the third-class Indian rail journey carried us and our 240 pounds of baggage from Calcutta to Dehra Dun in a state of constant semi-heat prostration and gasping thirst. A few days' hospitality at the Doon School as guests of the Headmaster, Jack Gibson, and Gurdial Singh, the geography teacher, put enough starch back in our wilted spines to continue our journey. Gurdial, an enthusiastic explorer and aspiring climber himself (he was later on the successful Bandar Punch White Peak expedition), made arrangements to meet us in the Badrinath area after school was out in the spring. He was also of great help in securing the final few items of equipment and in planning our route to Badrinath.

Our approach took us first by bus through Rikshikesh and from there along the Alaknanda Ganga, as this headwater of the Ganges is labeled. This is one of the main pilgrim routes in India, and during that season the paths are thronged with devout crowds making their way up from the plains to visit the sacred shrines in the hills. From the end of the bus line in Chamoli, we had a 50-mile walk uphill to Badrinath and, though groaning under our 80-pound loads, we still counted ourselves fortunate in not having to measure each foot of the way with the length of our prostrate

bodies as was being done by a number of our traveling companions. We were as constant a source of curiosity to the pilgrim travelers as they were to us, but despite the language barrier it was seldom long before we had established contact with each new group through smiles and gesticulations.

At Badrinath we were put up in one of the basement grottoes of the local temple by one of the town's leading holy men, Swami Jnanananda, who proved an able and sympathetic advisor during our final outfitting, acting as chief go-between and interpreter for all our transactions with food and porters. He had a true mountain man's appreciation of the grandeur of our natural surroundings, and we were overjoyed when he allowed himself to be prevailed upon to accompany our little troupe to Base Camp. The secretary of the Hindu Temple was also of great service to us, donating our entire consignment of rice and dal (a total of 60 pounds) with the brief comment that he chose to consider us among the pilgrims whose welfare it was his duty to care for.

Our five Mana porters carried only to the Base Camp along the Satopanth Glacier despite their repeated vows to stick with us all the way to the col on the west ridge. We could hardly blame them for their defection, however, when the 1,000-foot slope of snow and ice below the col came finally into view. It was clearly no job to tackle without adequate mountain boots, and we had only the ones we wore. We were held up at our 14,000-foot Base Camp by a two-day snowstorm, but with clearing skies we were able to begin our reconnaissance and encountered no trouble whatsoever in picking out a feasible route to the col. From Camp I, on the "Col Glacier" at about 16,500 feet, the approach to the col was clear and uncompromising. The only problem was how to traverse it with all our gear.

By this time our style of life during the approach across India and the foothills had begun to take its toll on our physical condition. Constant attacks of dysentery, resulting from impure water, and the unfortunate lack of protein in our steady diet of fried-stuffs from the bazaars had reduced our vitality to a discouragingly low point. When the fresh snow had consolidated sufficiently to lessen the danger of avalanches, Rickert was too weak to continue, so he was left in charge of Camp I while Laurie French and I tried to put up an advanced camp at 18,000 feet on the col.

After a quick breakfast of rice, cooked the night before, we set out with our 40-pound packs by 0530. In less than an hour of easy going we reached the foot of the 1,000-foot slope leading to the col, and here the work began in earnest. The slope was studded with bare cliffs of shattered ice, among which we had to wind a careful track, avoiding the bombarded areas beneath them. The slope steepened as we progressed, and, what was

worse, the snow increased steadily in depth and softness. In the face of what was obviously moderate to extreme avalanche danger, we burrowed ahead with all possible speed, covering the last 300 feet of chest-deep powder by means of a sort of butterfly breaststroke. At the col's crest we sat down on our packs at 1415, after having spent eight and one-half hours on the 1,000-foot slope. We exchanged a few leisurely comments about our exhaustion, the ruggedness of the climb, and the beauty of the scenery. In fact, these few comments were so leisurely that it was not until 1815 that we arose from our packs and set about making camp.

Not until the packs were opened did we remember that we had originally planned to make the round trip to the col in one day. We had no bags, mattresses, stove, water—nothing but a spare tent, rope, pitons, and five gallons of gas! Nor did we have the energy for a return to Camp I, so the tent was pitched, and we bedded down on the packs, rope, and gas can. It was not until some days later that we reached the conclusion that this night on the col must have been one of the most beautiful in our experience. The night was perfectly clear with a full moon sheathing the entire Chaukhamba region in shadowed silver; the perfection was only broken by an occasional grinding roar from Nilkanta's ice-buttressed north face. At the time, however, the cold was too intense and our exhaustion too complete to allow such scenery to register consciously.

The next morning we decided that another trip to the col was inadvisable because of the avalanche danger and our poor condition. We therefore started early and in two hours had packed all our gear back to Camp I. Our estimate of the danger of the slope was corroborated during the descent when we discovered that the entire lower half had avalanched the day before to a depth of about 18 inches! Later talks with Rick established the time of the avalanche as about two hours after we had passed its starting point. The schedule had been a tight one, and we did not care to repeat it.

Rick's internal maladies were worse than ever, forcing him back to Badrinath to recuperate. Laurie and I spent two more days at Camp I, doing nothing but guzzle snow water and cram ourselves with rice, hoping to accumulate enough energy to put through a new route to the col. The third day saw us starting up a rock rib to the west of our former ice slope, but we sorely lacked stamina and pitched our final camp at but 17,800 feet. This was our last effort, and the next day we headed down for good.

It seemed at the time that this western ridge was surely the best route on the peak, although the southeast ridge would probably go also, though much longer. Smythe tried it in 1936(?), reaching 18,000 feet before being forced back by lack of time to complete the siege. The west ridge

will prove a rather technical rock climb with pitons extremely desirable and perhaps absolutely necessary. It is interesting to note that Nilkanta was one of Sir Edmund Hillary's first Himalayan objectives and that his party got no higher than the col. When asked why he turned back, Ed answered briefly, "Too bloody steep for me!" It should also be noted that the approach to the western col from the south, through the Khiraon valappeared much easier, with no ice slope comparable to that on the north.

After our last try, Laurie and I made contact with Gurdial Singh, who had arrived on trek. We took leave of Rick in Badrinath, as he was forced to leave India because of his continuing ill health, and walked on up into the Bhiundar Valley (Smythe's *Valley of Flowers*) for two weeks of leisurely recuperation.

For three more months Laurie and I roamed the plains of India, lecturing to schools and embassy staffs and selling our equipment for a living. We parted in Kashmir. Laurie stayed on as head of the chemistry department at the Tyndale-Biscoe School while I headed home.

Rupees 20 was hardly enough for passage home from Karachi, but a lucky job as a deckhand on a Swedish freighter did very nicely. After a four-month trip along the underside of Asia, I once more reached Los Angeles, just one year and eight months and a day after leaving home. Seaman's wages for the voyage amounted to $250, so the over-all trip was really a very cheap one. At the same time it is this writer's opinion that the benefits of such marginal-existence travel as this outweigh in many respects the rewards of a comfortably supported expedition. Certainly the impact of the country and its people is much more stark and provoking than when the traveler is insulated from its effects by a well-padded pocketbook. The dangers of sickness and general deterioration of the health are greatly multiplied when one's funds are low; consequently, the chance of reaching many summits is much reduced. However, the quality of the mountain experience enjoyed by members of small expeditions has much to recommend it over that gained by the gigantic Himalayan task forces which have attracted so much popular attention in recent years.

Summary of Statistics

ATTEMPTED: Nilkanta, 21,640 feet, Garhwal Himalaya, 1949.
HEIGHT REACHED: *ca.* 18,000 feet.
PERSONNEL: Laurie French, Herbert Rickert, Willi Unsoeld.

The Logan Mountains, Northwest Territories

ARNOLD WEXLER

THERE has been little in the way of mountaineering in the northern latitudes east of Alaska and the western fringes of the Yukon. This may be due, in part, to the prevalent notion among climbers that the interior of the Yukon and the Northwest Territories is devoid of mountaineering possibilities; this may be due, also, to the remoteness and relative inaccessibility of the region. Surprisingly enough, there are attractive mountain ranges in the northern interior, most of which are untrodden. Among the more interesting are those that lie along the boundary between the Yukon and the Northwest Territories and collectively comprise the Selwyn Mountains. These mountains are subdivided into three major groups: the Logan Mountains, the Hess Mountains, and the Wernacke Mountains.

The Logan Mountains are the southernmost group, extending north to the Ross River, west to the Francis River and Francis Lake, and east to the South Nahanni River. The Logan Mountains are little known and have seldom been visited. In 1937, the Harry Snyder expedition made a preliminary survey of the area around Brintnell (Glacier) Lake, traveling by stern wheeler from Fort Smith down the Slave River, through Great Slave Lake, and down the Mackenzie River to Fort Simpson. From here it proceeded by outboard motorboat up the Liard River to the South Nahanni River, ascended the latter to Virginia Falls, and completed the final lap of the journey to Brintnell Lake by air. In an account of the expedition, in the 1937 *Canadian Alpine Journal,* H. F. Lambert wrote about "jagged peaks, like the Dolomites in their bold formation" and "extensive snowfields at elevations of about 7,000 to 8,000 feet."

In the early summer of 1952, Richard Shamp of Washington, D. C., led a small expedition into the South Nahanni River country. Flying from Watson Lake, Y. T., he landed on the South Nahanni River and then made a circuit trip through the northeastern reaches of the Logans, traveling up the Brintnell River valley to Brintnell Lake, crossing a low pass into a northward flowing watershed area, and subsequently returning to the South Nahanni and down the South Nahanni by raft.

That same year the Yale Mountaineering Club sent a party into the Logan Mountains. From a base camp on Brintnell Lake, the members of this group climbed nine peaks, mainly to the south around Fool's River. Dudley

W. Bolyard, in reporting on the Yale expedition in the 1953 Canadian Alpine Journal, wrote in glowing terms of the "unlimited possibilities for ascents of virgin mountains rivaling the Alps and Cascades in grandeur and difficulty" and of "extensive granite pinnacles."

On July 2, 1955, Sterling Hendricks, Donald Hubbard, Dave Bernays, Ray D'Arcy and I gathered at Watson Lake, Y. T. Hendricks, Bernays, and D'Arcy had driven up the Alaskan Highway from Edmonton, while Hubbard and I had flown in from Vancouver. Early the following morning, G. C. F. Dalziel transported men, food and equipment to Brintnell Lake in a de Havilland Beaver and a Cessna 180, depositing us near its western extremity on a prominent spit of land. The air distance was 150 miles; the flight took one and one-half hours. We had asked Dalziel to fly over the mountains, if possible. He cooperated and took us across the heart of the range. The view of the Logans, first from the air and then from the ground, was an exhilarating experience. In spite of the forewarning by Lambert and Bolyard we had not anticipated the ruggedness that confronted us. The mountains were startling in their vertical uplift. The peaks were not high in absolute altitude, attaining, at best, elevations of 9,300 to 9,500 feet; but since the mountains rose out of valleys as low as 2,600 feet, they had an unexpected relief of more than 5,000 to 6,000 feet. The rock was predominately granite, with metamorphic intrusions. Many of the mountains had smooth, exfoliated faces that bordered on the unclimbable, knife-edge ridges, and spire-like summits.

Brintnell Lake is at the eastern edge of the mountains at latitude 60° 05′ N. It lies near the outlet of the narrow Brintnell valley, receiving its waters from Brintnell River and discharging into the South Nahanni River. It is an excellent lake on which to land a seaplane. Some of the finest peaks are easily reached from the lake. The "Cathedral Peaks" are immediately west of the lake, with Mt. Harrison Smith (E. Cathedral Peak) dominating the foreground. Colonel Mountain and Mt. Ida are to the south, forming the true right flank of the valley.

We cached most of our supplies and, with three days' rations, moved up Brintnell valley. Two miles west of the lake, a large basin extends northward into a cluster of peaks. This became our objective. We ascended steep slopes on the true left wall of Brintnell valley, through bush and over rock slabs, to a pleasant alpine meadow at the entrance to the basin. Later, we discovered that the talus slope at the base of Mt. Harrison Smith formed a natural avenue to the basin. Ray D'Arcy had separated from the party during the day and, after spending one night in the bush, returned to Brintnell Lake.

"CIRQUE OF THE UNCLIMBABLES." *(Below)* "MOUNT HIGHER POLYMER," FROM "MOUNT PEACOCK." By Arnold Wexler.

MOUNT SIR JAMES MacBRIEN FROM MOUNT HARRISON SMITH. By Arnold Wexler.

MOUNT SIR JAMES MacBRIEN FROM MOUNT HARRISON SMITH. By Arnold Wexler.

"MOUNT PROBOSCIS" WEST FACE, FROM MOUNT HARRISON SMITH. By Arnold Wexler.

"STURMSPITZE" AND "MOUNT MOOSEJAW" (CENTER) AND "MOUNT IOTA" (EXTREME RIGHT).
East Flint Glacier between "Moosejaw" and "Iota." By Arnold Wexler.

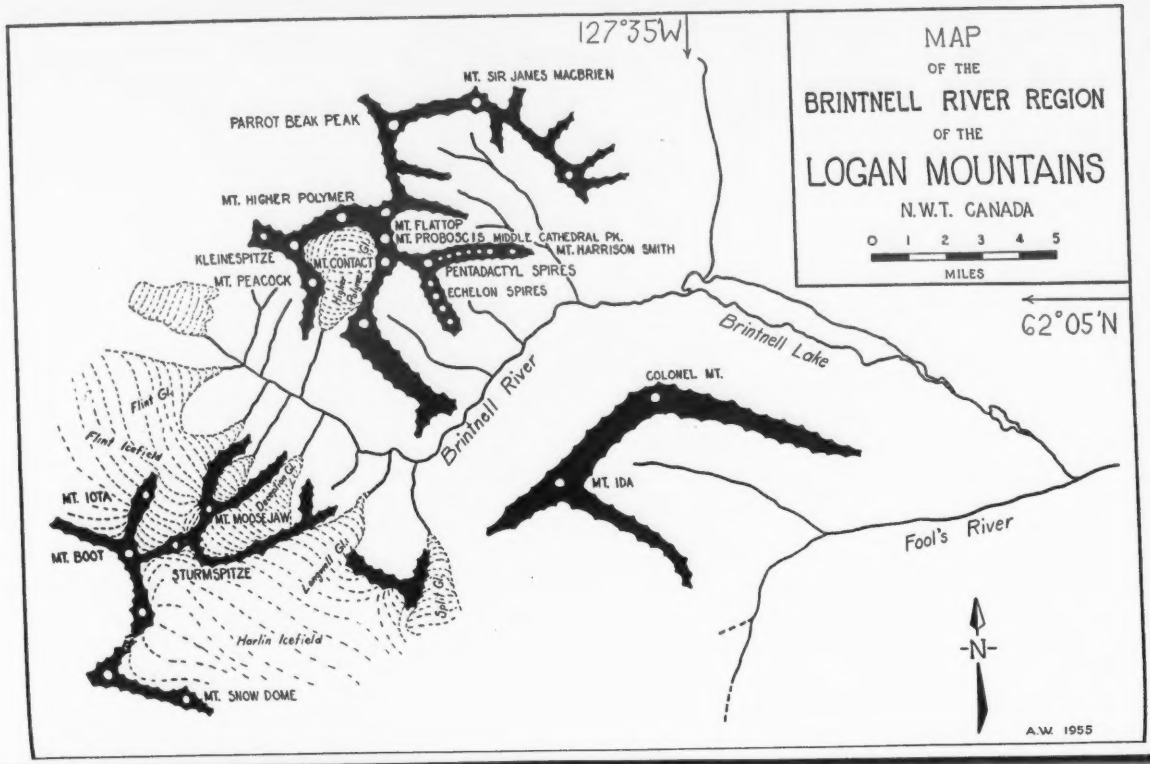
"STURMSPITZE" AND "MOUNT MOOSEJAW" (CENTER) AND "MOUNT IOTA" (EXTREME RIGHT). East Flint Glacier between "Moosejaw" and "Iota." By Arnold Wexler.

The next day we reconnoitered the terrain above camp. The basin was divided into small amphitheaters; we explored the first two amphitheaters to the west. The "Cathedral Peaks," with Mt. Harrison Smith at the eastern extremity, form the southern wall of the first amphitheatre, while at the western head is "Mt. Proboscis." The peaks rise out of this amphthitheater in bleak, black, smooth faces. Even with careful scrutiny through field glasses we could discern no obvious approaches to the summits. The rock was unrelenting in its high angle and unbroken expanse. The peaks forming the second amphitheatre were equally bulwarked with sheer faces. All we did was look and then retreat to camp. This was our introduction to the "Cirque of the Unclimbables."

The following morning we surveyed the third and fourth amphitheaters. These followed the same pattern. We could discern no reasonable routes, except on Mt. Sir James MacBrien. This mountain, which is the highest peak near Brintnell Lake, is at the northern end of the basin. Two slivers of snow on the lower slopes slanted diagonally upwards and to the left. The lower snow shelf gave access to the ridge, but there we encountered a discontinuity that could not be easily bridged. We therefore traversed eastward on the south face between cliff bands to a chimney that connected with the ridge above the discontinuity. Except for one friction pitch, the ascent to the summit, generally over good rock, but in part over snow and bare ice, was uneventful.

On July 6 we broke camp, descended to Brintnell River, returned to Brintnell Lake, and reunited the party. At the time we assured ourselves that the shortage of food and our concern over D'Arcy were the compelling motives for pulling out of the "Cirque of the Unclimbables." In retrospect, I suspect that part of our haste in leaving that area was the feeling of frustration engendered by these peaks with their sheer faces of flawless granite. They looked impregnable and impossible. It is likely, however, that on closer examination interesting routes may be evolved. I know of few mountain ranges in Canada that offer such a challenge to the rock enthusiast.

With provisions for 10 days, we traveled up the Brintnell, camping that same evening at the base of Mt. Harrison Smith, and, on the succeeding evening, on the first gravel flats in the upper Brintnell valley. At the point where the Longwell Glacier discharges into the Brintnell the latter executes a big bend. The river at this bend has gouged out a formidable canyon. We climbed the true left wall of the canyon, contoured above it, and eventually reached the gravel bars near the head of the river. On the eighth of July we climbed the slopes leading to the first basin, above the big bend, on the true left side of the Brintnell. We set up camp at timber-


MAP
OF THE
BRINTNELL RIVER REGION
OF THE
LOGAN MOUNTAINS
N.W.T. CANADA
0 1 2 3 4 5
MILES
127°35'W
62°05'N
MT. SIR JAMES MACBRIEN
PARROT BEAK PEAK
MT. HIGHER POLYMER
MT. FLATTOP
MT. PROBOSCIS
MIDDLE CATHEDRAL PK.
MT. HARRISON SMITH
KLEINESPITZE
MT. CONTACT
MT. PEACOCK
PENTADACTYL SPIRES
ECHELON SPIRES
Brintnell Lake
Brintnell River
COLONEL MT.
MT. IDA
Fool's River
Flint Gl.
Flint Icefield
MT. IOTA
MT. MOOSEJAW
MT. BOOT
STURMSPITZE
Harlin Icefield
MT. SNOW DOME
N
A.W. 1955

line, on a level with a prominent waterfall formed by the outflow from the basin.

The basin was subsequently named the "Higher Polymer Cirque" and the prominent mountain at the head (northern end) of the cirque was designated "Mt. Higher Polymer." On the ninth, the entire party ascended "Mt. Higher Polymer"; the climb took 17 hours. A small, but active glacier fills the basin. The snout was bare ice, but the upper area was covered with snow of the consistency of whipped cream. The right (east) arête of "Mt. Higher Polymer" was reached by kicking steps up a snow gully that terminated in a col. From there we ascended about 1,000 feet of firm rock at an average angle of 70 degrees. The climbing was excellent, although, to attain the summit ridge, it was necessary to negotiate several pitches of well-weathered friable rock. About 300 feet from the summit, the ridge broke sharply into a vertical drop of 25 feet. The party split into two groups. Each, in turn, rappelled off, climbed to the summit, returned and reascended the step with a belay from above.

There is a long gully that runs up the north face of the mountain from slightly west of the east col to the eastern end of the summit ridge. On the descent we set up three long rappels in the gully. This was a trying operation, for the rock was rotten and loose. The better course would have been to have descended on the more vertical, but firm, adjoining east ridge. From the col the trek back to camp was straightforward.

July 10 was a Sunday and, appropriately enough, a rest day. On the 11th, Hubbard and I traversed "Mt. Peacock" while Bernays and D'Arcy climbed "Mt. Contact." The latter is on the contact line between the granitic rock, which extends to the north, and the metamorphic rock, which fronts on the Brintnell River. The mountain rises to a triangular point and drops sheer for over 1,500 feet on the east. The ascent, from the glacier, was up the west face to the south arête and along the ridge to the summit. The main distinction of "Mt. Contact" is that it provides an approach to "Mt. Proboscis." We had studied "Mt. Proboscis" from the "Cirque of the Unclimbables." Its east face is an unbroken 2,000-foot smooth wall that almost defies description. From the "Higher Polymer Cirque," the west face is almost a mirror image of the east face, although the relief is not so great. The arête from "Contact" to "Proboscis" is the obvious route, except that it is a knife-edge with vertical discontinuities. Bernays and D'Arcy moved up the ridge to the first step and, after expending six pitons and two rope slings, retreated.

Hubbard and I followed the glacier to its western end to the base of "Kleinespitze." To the north was "Mt. Higher Polymer"; to the south,

"Mt. Peacock." We veered toward the latter, but to reach its north face we had to cut steps up a 60-degree slope of bare ice. The rock was so well fractured that the holds gave dubious security. Fortunately, after 250 to 300 feet of climbing, the average angle decreased. At 11:45 A.M. we stood on the summit. The return was made by continuing the traverse to a scree slope on the back (southern) side. This, in turn, connected with a gully that terminated near the snout of the glacier.

On Tuesday, we moved camp once more, this time across the Brintnell River. On the southern side of the valley, the Flint Glacier and Icefield extend northwest at an elevation of 7,000 to 8,000 feet for perhaps 10 miles; the Harlin Icefield extends southeast, also covering an appreciable area. These two icefields give this region an alpine appearance. "Mt. Moosejaw" and "Stürmspitze" occupy a prominent position between the two. Two long ridges extend northeast from the former summit, like the open jaws of a moose; a small stream issues from the tongue of a glacier entrenched between the two ridges. On a shoulder of the western ridge, at about 6,000 feet, we established a camp.

On the following day we divided our forces into two groups. Hendricks, Hubbard, and I traveled up the East Flint Glacier and climbed "Mt. Iota," a peak in the center of the Flint Icefield and "Stürmspitze," the highest mountain in this immediate region. The weather was uncertain to bad, overcast and occasionally snowing. "Stürmspitze" is on the Harlin-Flint divide and in good weather would provide an excellent vantage point from which to view the country. Bernays and D'Arcy first ascended "Moosejaw," approaching it up the glacier between its two ridges, climbing the eastern ridge and following the latter to the top. They then descended to the col between "Moosejaw" and "Stürmspitze," crossed the East Flint Glacier and climbed "Mt. Boot," on the Harlin-Flint Divide, by way of the northwest arête.

Two days of intermittent rain and snow confined us to camp. Early on Saturday, July 16, in spite of dubious weather, the entire party left for an excursion into the Harlin Icefield. To reach the latter, we went up the East Flint Glacier and crossed a shoulder of "Stürmspitze." At the southern edge of the Harlin Icefield, due south of "Stürmspitze," is Mt. Snow Dome. To reach it we trudged across the Icefield on breakable crust. Every few steps, someone would crash through the crust into water saturated snow, sinking, at times, hip deep. However, this was the only hazard. The climb to the summit was up a scree slope to an ice cap. The round trip consumed eight hours.

Our food supplies were running low, forcing a return to the food cache on the lake. On the 17th, we packed down Brintnell valley to the base of the slopes leading up to "Cathedral Cirque." After sitting out one day of rain, Hendricks, Bernays, and I continued to the cache, picked up provisions and returned. On Wednesday, July 20, we pushed up the slopes to "Cathedral Cirque," over slabs and through alder. Camp was set up on the only level spot, at the entrance to the cirque, near a small stream. We were excellently located for the "Echelon Spires," the "Pentadactyl Spires," "Middle Cathedral Peak," and Mt. Harrison Smith. Collectively, these are the "Cathedral Peaks." They offer rock climbing of every degree of difficulty.

Mt. Harrison Smith has a relief of over 5,000 feet. One gets the impression, when viewing it from Brintnell Lake, that it is a monolithic monument of polished granite. The aspect from the "Cirque of the Unclimbables" is no less severe. Hendricks and I set out on Thursday to reconnoiter for the route possibilities. We climbed over the outer right shoulder of the massif above camp onto the south face. A series of ledges broke the face into bands of vertical cliffs. We traversed these ledges, ascended slabs and cracks, and finally intersected the arête below a gendarme. A 35-foot finger traverse on the north face took us around this gendarme to the main peak. Next we climbed the gendarme, then traversed westward along the ridge to the "Middle Cathedral Peak," and descended via the prominent gully below the "Middle."

On the same day, Hubbard, Bernays, and D'Arcy climbed the "Outer (First) Echelon Spire." A snow chute, in the gully between the "First" and "Second Echelon Spires" gave access to the north face, and thereby, to the top.

On Friday, Hubbard, Bernays, and D'Arcy repeated the ascent of Harrison Smith and the "Middle," and continued on to climb "Pentadactyl One." The "Pentadactyl Spires" are interspersed in a row between the "West" and "Middle Cathedral Spires."

Hendricks and I climbed the "Second," "Third," and "Fourth Echelon Spires." A precipitous snow-filled gully cleaves the western wall of "Cathedral Cirque." Near the lower end of the gully, where the snow fans out on talus and scree, a narrow ledge could be attained. This we followed upwards across the base of the "Echelons"; it broadened and opened onto a high boulder slope which connected with the summit of the "Third Echelon." From there we ascended the "Fourth" and then retraced our steps to the "Third" and onto the "Second."

The following day we made a mass attack on the "Pentadactyl Spires." The result: Nos. 2 and 3 were climbed. Hendricks and I had observed a system of connecting greenery and recesses from the "Echelons" that offered the promise of a route. We headed for this system, intersecting a broad diagonal bench that commenced on a vertical line with No. 4 and ran upward and to the right. After 500 feet we took the second pronounced gully that went slightly back to the left. At its terminus we crossed a shoulder, again to the left, followed a narrow grassy shelf into a large couloir, and ascended directly to the col between "Pentadactyl Spires Nos. 3 and 4." Once there we could generate no enthusiasm for venturing out on the high angle faces of "Pentadactyl Spire No. 4." We turned our attention to No. 3. It was vertical on the south; on the northwest it was inclined, rooflike, at an angle of 45 to 50 degrees for 300 feet. Handholds were sparse so that the climbing was largely on friction; there were no breaks in the rock and few belay stances were visible. After two attempts at negotiating the roof, we retired from the col. Part way down the couloir we chose a shallow chimney that slanted up and to the west, leading to the col between Nos. 4 and 5. Once more we were confronted with an inclined roof on No. 4 and steeper walls on No. 5. No. 5 is actually a double-peaked spire, cleft on the south by a precipitous, narrow, and wet chimney. Again we felt no inclination to do more than look. We then traversed across the south face of No. 5, about 100 feet below the level of the No. 4-5 col, to the narrow chimney. It was less attractive than the routes from the col. At this point we were content to return to camp to the comfort and security of our sleeping bags.

The others were successful in their approach to the "Spires." Following a large gully, they reached the No. 1-2 col and traversed over Nos. 2 and 3. The climbing was interesting and enjoyable.

The weather deteriorated sufficiently so that we were immobilized the succeeding two days. On Tuesday, July 26, with food at a low ebb, we descended to Brintnell Lake. Two more days of uncertain weather confined us to low altitude activities. On Friday, July 29, our pilot arrived and evacuated us to Watson Lake.

Summary of Statistics

ASCENTS: Mt. Sir James MacBrien, July 6, 1955; entire party.
"Mt. Higher Polymer," July 9, 1955; entire party.
"Mt. Peacock," July 11, 1955; Hubbard and Wexler.
"Mt. Contact," July 11, 1955; Bernays and D'Arcy.
"Mt. Iota," and "Stürmspitze," July 13, 1955; Hendricks, Hubbard, and Wexler.
"Moosejaw" and "Mt. Boot," July 13, 1955; Bernays and D'Arcy.
Mt. Snow Dome, July 16, 1955; entire party.
Mt. Harrison Smith and "Middle Cathedral Peak," July 21, 1955; Hendricks and Wexler.
"Outer Echelon Spire," July 21, 1955; Hubbard, Bernays, and D'Arcy.
Mt. Harrison Smith, "Middle Cathedral Peak," and "Pentadactyl One," July 22, 1955; Hubbard, Bernays, and D'Arcy.
"Second, Third, and Fourth Echelon Spires," July 22, 1955; Hendricks and Wexler.
"Second and Third Pentadactyl Spires," July 23, 1955; Hubbard, Bernays, and D'Arcy.

PERSONNEL: Dave Bernays, Ray D'Arcy, Sterling Hendricks, Donald Hubbard, and Arnold Wexler.

Expedition Philosophy—1956

CHARLES S. HOUSTON

INTEREST in foreign mountain expeditions has grown enormously in the last decade, inspired perhaps by the heroic accomplishments on the world's highest peaks. Just as the period from 1854 to 1864 saw the first ascent of almost every one of the Alpine peaks, so may we expect the next eight to 10 years to see the ascent of many of the 2,000 Himalayan giants which tower above 18,000 feet. It is in fact almost as easy to reach the Himalayas today as it was to climb in the Alps one hundred years ago. We shall see more and more climbers of all ages and abilities venturing into these fascinating ranges to gain some of the peace, the excitement, the satisfaction, and the imperishable memories which come from communion with the greatest mountains. I would like to cover superficially some of the problems encountered and some of the satisfactions gained from a properly planned venture.

First let me dispose of the question of expedition philosophy. Now that the mightiest mountains have been climbed we should enter a period in which international competition decreases. Just as the first ascent of the Matterhorn became a race between the French, English, and Italians so have Everest, Makalu, and K2 inspired between countries competition which is neither desirable nor appropriate to their majesty. Such competition tends, in the words of Eric Shipton, "To make success more coveted than experience, so upsetting the delicate balance of values on which mountaineering is founded and to destroy the fundamental simplicity of the game." With these great prizes won, we may hope that rivalry will decrease and that men will climb for the sake of climbing rather than for the pride of conquest. The happiest climbs are those made for pleasure rather than for gain, for the joy of climbing rather than for the pride of standing on a summit. No mountain is really "conquered." Anyone who has experienced a storm in the high mountains is well aware of the insignificance, the puny strength, of man beside the elements. For a few moments now and again a man may stand on the summit of a high peak, but only for a few moments, and only periodically.

Large or small?

The argument of "large" versus "small" expeditions is still hotly debated. The huge military type of expedition succeeded brilliantly on Ever-

est, K2, and Nanga Parbat. Superbly organized and planned, brilliantly led and lavishly outfitted, these expeditions were frankly determined upon the summit. Without in any way trying to detract from their success, one must realize that each of them was blessed with ideal weather at the most important times. Annapurna was climbed in a spectacular but dangerous attack, which succeeded partly because maximum advantage was taken of a brief period of good weather, not without risk for which the climbers paid. Other large expeditions, equally well organized and led, have failed when weather struck against them during their critical days. In the glare of publicity which has surrounded these triumphs we may have forgotten the magnificent ascent of Minya Konka by a group of four climbers almost unassisted by porters over 20 years ago. The highest summit reached for many years was Nanda Devi, climbed by a small, rather poorly equipped expedition. Even more impressive, and more recent was the spectacular climb of Cho Oyu, by a party of three Austrians and two porters, a mountain which had been called almost unclimbable by several preceding expeditions. Perhaps we have lost sight of the successful and supremely happy summer parties led by Shipton, Murray, Tilman, and others which filled in great blanks on the map, produced much pleasure for their members as well as for the reading public. The large expedition is a complicated and expensive affair available to only a few, and can be organized only for the greatest peaks. It has probably passed its vogue. We may expect now to see many small parties, lightly outfitted, and planned on an amateur basis. It is interesting to remember that the second highest summit yet climbed by Americans is Istor-o-Nal, climbed last summer by two young men without any formal expedition or organization behind them; their summer's experience was infinitely greater than it would have been had they been members of a huge organization.

I will agree that the large expedition may be able to deal better with a serious disaster, it may have a slightly better opportunity of reaching the summit in dubious weather on the large mountains, but it is expensive, unavailable to the majority, cumbersome, not infrequently produces hard feelings among the party, and is just as subject and perhaps more so, to the vagaries of the weather as is a small expedition. Five small expeditions could be planned for the price of a large one. Given the right men in the right place on the right day, almost any mountain can be climbed to the top. But given bad weather at the crucial time, no great peak will be climbed. Regardless of philosophy, the vogue of the tremendous expedition has probably ended with the fall of the greatest peaks. Weather plays a far more decisive role in success or failure than does size of expedition.

How does an expedition get started? How does one join an expedition? I have no pat answer to these questions which are asked me often. My own began as informal talks with friends: "How about going to the Himalayas next summer?" Obviously, good previous experience is desirable, gained through week-end climbs followed by longer vacations with guides or more experienced friends in the Alps, Rockies, or Alaska. Eventually, given the will, a major foreign expedition develops. These do not come about by themselves. A few enthusiasts are necessary, and from their enthusiasm and with much hard work an expedition grows. I emphasize the work, for a Himalayan expedition takes a huge amount of planning, most of which falls on a few persons.

Choice of objective

Choice of an objective comes next. On this I have only a little to say, and these are words of caution. Your first expedition should be a great pleasure, and its objective should probably be a limited one if you are planning it yourself. It should be chosen with many points in mind: accessibility, difficulty, and enjoyability. It would be ridiculous for an inexperienced party to attempt Kangchenjunga, and yet in 1936 four of us planned to do just this. Thank heaven we were dissuaded and turned to an only slightly lesser objective, Nanda Devi, and we did have enough sense to add four great climbers to the party. On this smaller peak we had a successful summer, and the expedition was an overwhelming joy for all. The Minya Konka party was certainly overambitious, and nearly failed; however, their experience was unforgettable, and worth its cost. In general, the objective should be chosen not for its height alone, but with other features in mind: The surrounding area, the ease of access, the potential climbing routes, and the season.

At present India is less receptive to Europeans and Americans than is Pakistan. Although the majority of the Himalayan peaks lie along the frontier between India, Tibet, Nepal, Bhutan, and Sikkim, much of that frontier is closed for political reasons. It is as a result difficult to obtain permission to enter any but a small area of the Indian Himalaya. Frustrations are numerous in dealing with the authorities, although this may change in the near future. By contrast, Pakistan actively encourages climbers, and permission to enter the huge area of the Karakoram with its satellite ranges, is readily available. At present, Pakistan offers fewer obstacles to climbers than does India.

Permission

Application for permission to enter either Pakistan or India should be made through the appropriate embassy or consulate in Washington or New York. Full details of the objective, alternate objectives, the dates of arrival and departure, the name, occupation, age and past experience of all personnel, together with details of the support and financing of the expedition should be sent with the initial request if possible. If this is not feasible at the beginning, indication should be made of the outline of the expedition and the statement made that full details will follow rapidly. Detailed equipment and food lists will have to be submitted before the expedition is far along. The backing of some well-known organization such as a geographical or mountaineering society is desirable, and character references should be included.

In my experience it has been fruitless to apply through our own State Department, but direct application to the appropriate embassy or consulate, or even to our own embassy in India or Pakistan is more helpful. As is the case in so many things, personal friendship and contacts are often the only way things are expedited.

What time of year?

The timing of the expedition may be crucial. The southeast monsoon coming up from the Indian Ocean attacks the southern end of the Himalaya any time from early May to mid-June, although in any one year it is often predictable within two weeks. This southeast monsoon usually ends in September, and is followed by a period of one or two months of beautiful weather, though increasingly cold. Climbing in the southeastern Himalaya must therefore be done during the short and uncertain period between the end of March (when the winter is over) and the first week in June, or from the middle of September until the end of November when the winter again becomes too severe. In the Karakoram, however, only the southwest monsoon occurs, and its development is weak. It has been frequently stated that the monsoon does not enter the Karakoram, but this is probably true only in part. Undoubtedly the southern-most peaks receive some monsoon weather during July and August, but I believe that the highest peaks in the Karakoram, like great mountains everywhere, form their own weather. The range on the whole is probably subject to the same type of weather as are the Alps: considerable variation from year to year. In general, one should not enter the Karakoram earlier than the 15th of May (because of deep and frequent snowfalls on the approach glaciers) and not later than the 15th of September. No one has any experi-

ence of climbing in the Karakoram in the fall, but it is believed that weather conditions are a good deal more severe than they are in the southern range at the same time. Serious high altitude climbing is probably best done during late June and all through July.

Choice of members

The choice of members of your expedition will necessarily be a personal affair. My own philosophy has been to place character, personality, courage, and adaptability as the highest qualifications. Obviously, climbing skill and experience are essential. Good health is imperative, but over and above these qualities is a sense of humor, strength of character, courage in the face of adversity, ingenuity, and consideration for one's fellows. These are the intangibles which make a good climbing companion. There is no place for the prima donna on a mountain expedition; rock acrobats and entrepreneurs do not belong in the Himalaya. I am not convinced that it is either desirable or necessary that members of a party have climbed together before, or even have known each other before the expedition. Having been on three major Himalayan expeditions with several men I have never known previously, and having had all three turn out to be harmonious and happy, I sometimes wonder whether old friendships may not be more of a hindrance than an advantage. One may be apt to take liberties with old friends that one would not venture with new ones. There is also something fine in meeting a new human being and coming to know him as intimately as one does on an expedition. In general, I believe that the selection of a climbing party should place human quality before climbing skill, expedition experience, and financial solvency.

Finances

Now that the ugly matter of finances has come up it might be well to dispose of this briefly. For attempts on the highest mountains in the world it was possible to obtain money from private sources, newspaper and magazine articles, radio and television. These funds were hard to get in this country and were meager compared to those available abroad. Some estimates of the cost of the Italian K2 expedition run as high as $500,000, although Everest cost somewhat less. There are, however, still many ways of getting the necessary money for smaller expeditions to smaller peaks. I would estimate that six men could go from the United States to the Karakoram, remain three months, and return for $3,000 to $3,500 per person, provided they were satisfied with minimum equipment.

It is undesirable, possibly unethical, and certainly undignified to use advertising as a source of funds. There may, however, be some approach

in good taste which would enable a commercial sponsor to help foot the bill in return for dignified publicity for his product. Control should lie in the expedition's hands, and mutual reassurance of integrity is desirable. Good taste is imperative. The use of expedition photographs by television can be very, very good, and my own experience with the National Broadcasting Company has been one of the happy memories of the 1953 K2 expedition. The sale of motion picture film to commercial companies should not be ignored, but it has not been thoroughly explored as yet. It goes without saying that this film must be excellent. Some money can be raised by lecturing after the expedition is completed, but the story must be good, the speaker competent, and the pictures outstanding, for a high standard has already been set in this field. Certain magazines, notably *The Saturday Evening Post,* are willing to buy mountaineering stories periodically, and this magazine in particular has been most helpful to many parties. They have a high standard of literary style, and you must meet this or else be rejected. Smaller and cheaper magazines will also pay, though less, and they are more likely to prostitute the story. Certain pharmaceutical manufacturers, food producers, and equipment dealers are willing to foot part of the bill if their own products are used and commented upon frankly. Most companies are willing to contribute limited amounts of food and equipment. A small expedition fund has been established on the West Coast and another in the East to provide money on a loan basis for small expeditions, and there is talk of an American Mountaineering Foundation like the exceptional Swiss Foundation which may have a large enough capital to actually donate funds. Some universities and foundations are willing to act as sponsors for an expedition provided there is a legitimate scientific activity attached.

Food and equipment

Once permission has been obtained, finances in sight, personnel chosen, objective and timing planned, then the collection of food and equipment occupies all of your time. No two mountaineers will have the same ideas on food, and it would be foolish for me to list mine here. The general principles should be to provide the lightest in weight, the simplest in preparation, the most palatable, and the most nutritious. Extra vitamins are imperative. A surplus of at least 25 per cent should be provided for wastage. Provision for flavoring liquids should be extensive, in order to make possible the enormous intake which is required at high altitude. Porter food for the mountain should be similar to that of the climbers, with the addition of some local produce (flour and rice). Living on the country during

the approach is excellent though unpredictable, but a stern word of warning should be issued about the risk of illness from bad water, spoiled meat, or dirty preparation. Whether or not the food used on the mountain is prepacked depends on your philosophy. Having used both prepack and bulk method I lean toward the prepacking which has been highly developed by many parties. It is well to remember that above 20,000 or 22,000 feet appetite is poor, energy for food preparation decreases, and individual tastes vary widely.

Expense should never be spared on equipment. The best possible tents, boots, and sleeping bags should be obtained. Clothing is more variable and should be individualized. At present we have no equipment in this country to equal that available in Switzerland, Italy and France, although several groups are making admirable attempts in this direction. Boots are the least satisfactory item of equipment available today, and our own Korean type insulated boots are probably the warmest available, although Norwegian reindeer boots are better in deep snow. Gloves are a difficult item, and no completely satisfactory type is yet available for rock and snow work. Electrically heated gloves and socks are available, but still experimental. Many different tents have been developed, and for high altitude the inner lining, which adds only a pound or two in weight, but a vast amount of warmth is well worthwhile. Individual preference in most of these items is variable, and we could argue all night the relative merits of this and that. I would like to add once more that tents, sleeping bags and boots should be the best available. Stoves are a crucial item also, but several good models are available in the Coleman and Primus. In my own experience gasoline, strained through a chamois and carried in large five-gallon Army cans, is the best fuel. It is possible that the butane stove may be soon available in a high altitude form.

Medical preparations

Before the climbing party is finally selected each should have a thorough physical examination including an electrocardiogram, chest X ray, blood count, and urinalysis. Disqualifying defects include the following: Any type of heart disease or any history whatsoever of rheumatic fever, any active lung condition, recurrent appendicitis, hernia. Minor conditions such as athlete's foot, hemorrhoids, poor teeth, tonsillitis or bronchitis or intestinal difficulties should be completely controlled before departure. Careful dental repairs should be made just before departure. Protective injections which are necessary include the following: Typhoid, paratyphoid, cholera, smallpox, yellow fever, and plague for certain areas.

Tetanus toxoid within six months is important but gas gangrene serum is not. Particular attention should be paid to allergies in the event that a man might need a drug treatment on the mountain. Life and accident insurance, perhaps on a term basis, is desirable for each member.

Financial agreements

In the few months before the expedition departs, particularly if commitments have been made for sizable sums of money, and particularly if it is anticipated that some revenue will be gained after the expedition is over, an undertaking should be made between the members of the expedition regarding funds. This undertaking should be a formal document and should include provision for resolving liabilities should the expedition be insolvent, as well as provision for the proper and fair distribution of any income from books, lectures, or other sources after the expedition has ended. Such an agreement should be binding on all members of the expedition for a period of one or two years after the commencement of the trip, and should be signed by all. Once this is done we have less risk of disagreements and arguments because of the inevitable dollar.

Transportation

Transportation to the mountains depends upon the time available, but few men can afford to take the 30 days required for a boat trip, whereas plane transportation takes only three or four days and costs little more. Military air transport may sometimes be arranged, and rarely a free ride is available by commercial airline. It is conceivable that with more expeditions going to the Himalaya several parties might join forces and charter a large plane. Transportation must be arranged for in advance, and in my own experience it is desirable for the party to go out together, although equipment should precede the expedition by a minimum of three months by sea. Incidentally it is important that the expedition arrange for customs clearance in advance, preferably at the time of the initial request for permission. Otherwise, entry permits are hard to get, and customs duties may be prohibitive. An undertaking must be signed that the equipment will either be used or re-exported, and not given away in the country.

Along this same line it is essential that several other permissions be obtained ahead of time. Permission to bring in cameras, and unexposed film must be received in writing. The same cameras must be re-exported, and their serial numbers should be noted. Permission should also be requested to export the exposed film without development in Pakistan or India, for color developing is almost unavailable there. Unless this permission is

requested ahead of time it may be hard to get. Maps, particularly detailed maps of these politically sensitive areas are almost impossible to obtain because of military restrictions. However, most of the mountaineering journals over the past 30 years have printed enough maps to cover any area you wish to visit, and the larger scale maps are not quite so hard to obtain. It is hoped that this difficulty will be solved in the near future. Permission for airplane flight around your objective may be obtained ahead of time, although here again one must realize that this is a politically sensitive area. Whether or not air drops are used depends upon your own philosophy. Only once has a large air drop been used in the Himalaya (on Nanga Parbat in 1938) and considerable wastage and breakage occurred. This is largely because of the high altitude of the drop, and the difficulty of precision bombing in this area.

In general, you should avoid train travel in Pakistan and India during the spring and summer, for it is hot, dirty, slow, and exposes the party to many diseases. Commercial airlines are good and reliable, and will take you as far as a frontier town. Often air transportation can be arranged even further, particularly in the Karakoram, by a reliable organization. Private planes are difficult to charter and unreliable.

Your porters

At the final jumping off place it becomes necessary to arrange for porters, since little can be done from a distance or in advance. The largest expeditions have employed 700 or 800 men and have had much trouble. The smallest parties can manage with 20 or 30 men (for six climbers) and these can be selected personally with anticipation of little trouble. It is essential that their duties be explained in advance and rates agreed upon. Throughout the Himalaya a porter is expected to carry 60 pounds plus his own clothing and such food and equipment as he wishes, and for this he is paid three rupees per day to base camp, four rupees up to 17,000 feet, five, six, or seven rupees above this. Above the glacier line he must be provided with food, snow goggles, a blanket, and, if possible, some clothing. Below the glacier he provides his own food, utensils, and shelter. In most areas the daily stages are fixed, and it should be made clear in advance that the porter caravan will travel the conventional stages. If you require them to make double marches they may expect double pay, but on the other hand, if they make only half marches they may be paid only half fees. It is certain that porter wages will increase as expeditions become more numerous, but it is important not to overpay since this spoils them for the future. Like other people all over the world, once the wage increases there

is no limit to what they will ask. One man should be delegated to speak for the porters, and arrangements should be made through him. It is not practical to make a written contract with them, and a contractor is neither necessary nor desirable.

Your dealings with the porters is the most important part of the expedition in the field. Treated well, made to feel members of the team rather than servants, and encouraged, humored, and treated with consideration, they work superbly. Bullied, abused, and treated like inferiors, they will give much trouble. In my own experience theft has been unusual, but temptation should not be placed in their way, and the baggage should be locked or otherwise made secure. You must be able to laugh with the porters, and to help them in difficult places, to show them that you will carry a pack also, and best of all you should be able to talk with them in their own language. Do not try to beat down their price too much, but pay them fairly, and expect fair work from them. If you try to cheat them, they will out-cheat you, but if you allow them to cheat you, they will cheat you more. If you treat them well, you will get a good reputation, and future expeditions will be welcomed. If you treat them badly, your reputation spreads, and future expeditions will be jeopardized.

High altitude porters are now highly organized in India, and the Darjeeling Mountaineering Institute can provide a modest number of experienced high altitude Sherpas. The equivalent does not yet exist in Pakistan. Though some of the Hunzas have acquired experience already, and will ultimately be as good as the Sherpas, who are not welcomed in Pakistan because of the current political friction; the reverse is also true. In my experience the best of the ordinary porters will carry high if treated properly, safeguarded, and provided with good high altitude equipment, sleeping bags, food and shelter. It is important to be sure before you leave that the men you hope to take high are up to it physically, and they should be examined in advance. During the approach march much fun can be had with the porters if you try to train them in rope management and climbing technique. To your surprise they will be better than you are in many ways, though they fall short in incentive, imagination, and independence of action. On the mountain itself I feel strongly that porters should never be left unchaperoned in difficult situations, and should never be left in camp during bad weather without the company of an experienced climber. The disasters which have overtaken porters, have usually been due to leaving them on their own, to exposing them to conditions where judgment and past experience were essential, or to trust their judgment too greatly. *Porters are the responsibility of the climbing party,* and in this field they

should *not* be treated as equal. On the mountain high altitude porters should not be expected to carry more than the climbing party.

It is worth stressing that on the mountain porters eat as much, require the same weight in clothing and shelter and fuel, and carry no more than climbers. They are more of a responsibility than a climber. It is, therefore, possible to argue just how valuable a high altitude porter is, although in case of trouble he certainly can be life-saving. My own inclination is to use only climbers above 20,000 feet, leaving a small reserve of porters in base camp.

Obviously, knowledge of the language is highly desirable. If you can speak a few words of Urdu and Balti, you will add greatly to your enjoyment of the trip, as well as to the ease of managing the porters. These are not hard to learn, and a few hundred words will do wonders. Incidentally, a representative of the Pakistan government is required to be present on all expeditions. He is usually selected from the military by the government, and in the past has turned out to be a wonderful addition to the party. He may have had little or no climbing experience but makes up for this in desire to learn. Accepted as a member of the climbing party he can be a great addition, and some enduring friendships have been made in this way. It should be part of your pleasure and your responsibility to see that your host gains some benefit from your expedition.

The approach

During the march in to the base of the mountain, however long or short it may be, protection against illness is vital. No one should eat raw foods that have not been thoroughly cleansed in a disinfectant or drink water that has not been boiled. Since many streams contain mica which causes diarrhea even when the water is boiled, a water filter is highly desirable if not essential. Cooking utensils, and the cook's hands should be clean, although this is more often an unrealized ideal than an actuality. Areas known to have epidemics raging should be avoided completely. One should never pass through a malarious area without taking prophylaxis before, during and for a short time afterwards. At present we have no protection against sand fly fever which is brief though disabling. It is common in the Karakoram. Whether or not one should take a daily protective antibiotic such as Aureomycin or Penicillin is debatable, but personally I do not think it is desirable. Since much of the march will be through hot weather, a high salt intake is necessary, and large amounts of fluid should be provided. Each man should carry his own canteen filled with tea or boiled water each morning. Initial marches should be brief, and of course good

footwear is imperative, because too many expeditions have been spoiled by the development of pulled tendons or serious blisters in the first few days. Never forget the sun. Short trousers and short-sleeved shirts may result in serious sunburn which will make life miserable for you for a week or longer. Sunstroke has, in my opinion, been over-emphasized, and the solar topee is a thing of the past. Nevertheless, some type of headgear is recommended for the march in. You may be sure that the first few days of the march will be difficult, full of physical and emotional irritations.

As you approach 10,000 feet some members of the party will feel the altitude. As you go higher the symptoms become more pronounced, and headaches, poor sleep, irritability, and loss of energy are common. Base camp should not be above 15,000 feet and should be in pleasant surroundings and on grass if possible. Brushwood and trees are usually available up to this altitude and will save fuel. Two weeks is a minimum and four weeks is desirable between 15,000 and 18,000 feet for acclimatization, because "rushing" a mountain above 20,000 feet is dangerous and unpleasant. During the acclimatization period frequent sorties should be made on small peaks, and the party thus becomes a team while acclimatizing. Again I must emphasize the necessity of plenty of liquids, for a high urine output appears to hasten acclimatization. Remember that strong tea produces insomnia and indigestion, and for this reason the fruit juice flavoring and the like are desirable.

Attack on the peak

During the actual attack on the peak the ideal is to pack high and sleep low. As a camp is being established one should pack all loads to it during a period of several days while sleeping at the lower camp, moving to the higher camp only when all the packing is completed. Then the process is repeated. During the past few years a startling number of climbers have succumbed to pneumonia, usually of a fulminating type, preceded only by a brief period of sore throat. These cases have generally occurred at the altitudes above 20,000 feet, and the information available is not conclusive. It is possible that many were not actually pneumonia but heart failure. Nevertheless because of this risk, the lower one lives the better. A bad sore throat, any fever, or any suggestion of respiratory embarrassment should be instantly and energetically treated with antibiotics, and the patient should be taken down to a lower altitude immediately. Pneumonia is almost invariably fatal above 20,000 feet. Frostbite is always a menace, made worse by the lack of oxygen and the lack of fluid at high altitude, for these make the blood thicker, more sluggish, and the tissues more

susceptible to cold. Early cases of frostbite should be evacuated to base camp. Treatment of frostbite has no place in this article, but I may mention that heroic therapy is neither necessary nor desirable.

Sleep will always be a problem above 20,000 feet. The use of oxygen at night is a luxury which most expeditions cannot afford, but which provides great dividends in the rested feeling next morning. The effectiveness of sleeping tablets varies from person to person at high altitudes, but these should be used freely. After a sojourn at very high altitude descent to a lower camp is highly desirable if only for a good night's sleep, for this is one of the things you crave almost more than anything else at high altitude, with the possible exception of enough to drink.

Oxygen vs. acclimatization

While we are on the subject of oxygen it is worth saying that the properly acclimatized man will, in most instances, be able to climb well above 23,000 feet. Men below the age of 25 have not, for reasons which are still obscure, acclimatized well above this altitude, and in general very high climbing parties should not be younger than 25. The upper age limit is probably between 40 and 45, though here again there are exceptions. Acclimatization is indispensable above 22,000 feet. A well acclimatized party will, in my opinion, certainly climb Everest without oxygen in the next decade. Oxygen relieves the cold, the insomnia, the mental and physical fatigue caused by altitude but has little effect on the shortness of breath which is your worst problem very high. Oxygen is heavy, expensive, and complicates your transport problem. It should be taken to base camp for medical emergencies, but is not necessary on the mountain, and quite apart from the sporting element, need not be used. Certainly, it is not needed on any peak under 25,000 feet.

It is surprising how seldom bad injuries have occurred on high mountains. When they do occur, of course, the evacuation problem is a very serious one. Fractures should be treated conventionally, as should all injuries. I believe that the future will see a trend toward the use of adrenal substances such as Cortisone in accidents or illness at high altitude. Undoubtedly more serious adrenal depletion occurs at high altitude than we now appreciate. Surgery, such as an appendectomy and other serious procedures, should be done only if absolutely imperative. Few men are qualified to remove an appendix under the conditions which prevail at most base camps. In general, antibiotics, morphine, rest, and proper food and drink will be the better treatment for most conditions than will an operation under the crude conditions there prevailing.

Photography and science

The science of high altitude photography is still incompletely explored. This is not the place to go into technicalities, and I will say only that the light values above 15,000 feet are extraordinarily high, and one tends to over-expose rather than to under-expose all film. If a Crookes filter is used, Kodachrome usually turns out a picture which is slightly too brown, but if no filter is used the pictures are usually too blue due to the ultra-violet. Haze filters vary. The contrast between light and shadow is terrific, and uniform exposure is difficult. Film does not deteriorate significantly even in three or four months, but moisture must be avoided. Ektachrome seems to be somewhat better for high altitude light than is Kodachrome, but individual preference prevails here. Of course, cameras must be winterized, freed of all oil and moisture, and are generally carried in a dust and moisture-proof sack. I have never had trouble with properly prepared cameras even to 26,000 feet. Stero-cameras are more effective than the regular, just as color film is better than black and white. If the motion picture film is to be used commercially a tripod is essential, and sound speed (24 frames per second) is better than silent. Tape recorders are now available which run on batteries, and these can add much to the value and interest of film if used intelligently. I am intrigued by the use of a tape recorder instead of a diary. There is no doubt that a professional photographer will add to the party, although I am against such an addition unless he is a climber. A good amateur armed with a good camera, time and imagination, some knowledge of high altitude photography, and a tape recorder can turn out a wonderful film. Sound effects could also be remarkable, especially if they include members of the expedition talking informally about their experiences, particularly when high.

So far as scientific work is concerned on an expedition, it has always seemed to me difficult to combine good mountaineering and good science. The science suffers or the mountaineering suffers, but it is hard to do both. If you need to justify the mountain expedition by some scientific work, then by all means include a scientific wing, but keep it separate, under subordinate leadership, and with its own bandobast.

Home to memories

One of the curious things about an expedition is the effect on its members when they come home. It has seemed to me almost inevitable that the first few weeks of excitement and elation are followed by several months of depression and letdown. To have spent months at high altitude surrounded by some of nature's most wonderful scenery, to have pushed

yourself to the limits of your resources, and to have shared these great experiences with close friends makes the return to civilization a real anti-climax. From an exciting contest with nature where one relies upon one's self and one's friends, one returns to the triviality and pettiness, the competition and frustration of civilization. Inevitably the result is discouragement. If you recognize this possibility ahead of time much of the sting is removed, and the return becomes more pleasurable.

I must again emphasize one of the things which I consider most important, the relationship between peoples. Surely if our world is ever to become unified and peaceful the peoples of the world must get to know each other, not as nations, but as individuals. Each American who goes abroad to climb is an ambassador. His manners, his attitudes, his morals are all considered to represent those of his country. He must carry himself politely, he must be considerate and generous, he must not be overbearing and supercilious. He must not criticize either his own country or his host's. He should not bully. He must not shirk work. What he does will not only make possible or impossible future expeditions, but it will also change the attitude of all who meet him toward America. Each of us is an ambassador, and each of us has the power to do great good or great harm. By these exchanges of good will, by these contacts with people of another country, the bonds of friendship between nations will be strengthened or weakened. And so mountaineering expeditions are in a small sense our own personal contributions toward international peace and good will. Whatever else they are, good expeditions are a source of pleasure which will never end, and one of the richest memories that a man, a mountaineer, or a non-mountaineer, can ever have.

The Central Howser Spire

DAVID BERNAYS

On a spectacular camp on a rock island on the height of land between Pigeon Spire and the Howser massif, Dr. George Austin, James McCarthy, John Rupley and I assembled on the evening of August 7, planning our attempt on the unclimbed central tower of the Howser Spires. To the south a hanging glacier plunged sharply thousands of feet into a deep valley. Scarcely 500 yards away the gray walls of the South Tower rose sheer out of the snow. All around the horizon lay range on range of mountains tinted by the sunset. Our reconnaissance that warm, cloudless day had been from the distance. A closer approach had been impossible, since the steep, fluted slopes above were releasing avalanche after avalanche in the hot noon sun. The climb appeared to hold two serious problems. First came the giant bergschrund which stretched like a great medieval moat across the entire face of Howser. Finally there was the sheer rock step just below the summit. From the distance we had scanned the bergschrund for a long time and finally picked the most likely spot. By starting before dawn, we should have hard snow and hoped to reach the bergschrund in about twenty minutes. The next 50 feet would be the first problem. Beyond that there appeared to be 600 or 700 feet of extremely steep, fluted snow and ice with an occasional rock island. This snow reached almost to the col between the Middle and North Tower. Above this there appeared to be several leads on moderate rock leading to the sheer step. Beyond lay the summit.

The first gray light of dawn found us prowling on the lower lip of the bergschrund. Our judgment had been good; a large cracked block of icy snow bridged the gap and lay against the upper roof. Above it rose a slightly overhanging bulge of hard snow. It yielded surprisingly quickly to a double ice axe attack. Beyond, a 200-foot lead brought us to a good belay high on the first rock island. Above lay pitch after pitch of steep fluted snow and ice. The feeling of height was terrific, for we had underestimated the length and angle of the slope. The neighboring peaks were already far below us, and camp was just a collection of colored dots among the rocks. We felt like tiny animals on a large and steep, white corrugated roof.

After what seemed ages we reached the col. Here John and Jim took over the lead from George and me. Several pitches of enjoyable rock brought us to the step. It was sheer. After hunting about, we finally found what appeared to be a feasible chimney on the east side. Jim ventured into it. The best that could be said about it was that all other alternatives were worse. It was more a vertical gulch than chimney, rotten, rickety, and very, very moist. As a final straw the piton cracks were either bad or nonexistent. Jim started gamely up. One hour and nine pitons later, all of which adhered more by faith than by friction, his triumphant whoop of relief announced that he had surmounted the step. He had done a superb lead on a very exposed and ticklish stretch of rock. The rest followed quickly as the pitch was rendered much easier by a rope from above. Twenty feet of simple rock led to the summit. Since this was the first virgin peak for George and John, we let them climb the final block first.

There were several small clouds drifting overhead as we began the descent, and I foolishly pronounced them fair weather clouds, a guarantee of good weather. As we started down the snow slope, we heard the first thunder and for the rest of the descent we were constantly in and out of small but violent storms. Finally, one long rappel from the lower rocks, using every inch of rope, got us safely over the bergschrund. Fifteen minutes later we were back in camp. North and south of us the black columns of rain flickered with lightning. To the east Bugaboo Spire stood golden in the last light of sunset. The last big peak of the Bugaboos had been climbed.

Summary of Statistics

ASCENT: Central Howser Spire, Bugaboos, Canada, first ascent, August 8, 1955.

PERSONNEL: George Austin, David Bernays, James McCarthy, John Rupley.

Operation Medicine Bow

RICHARD W. MURPHY

On Thursday, October 6, 1955, at approximately 7:12 A.M. a United Air Lines DC-4 carrying 63 passengers and three crew members crashed into the east face of 12,005-foot Medicine Bow Peak, located about 40 miles west of Laramie, Wyoming. The immediate problem was removal of the bodies, collection of U.S. Air Mail, and survey of the wreckage in order to determine if possible the cause of the accident. Since the plane was lodged on a ledge halfway up a 600-foot cliff, experienced mountaineers were required. The University of Wyoming Outing Club (U.W.O.C.), located at Laramie, was called in immediately. Subsequently ten members of the Rocky Mountain Rescue Group (R.M.R.G.) located at Boulder, Colorado, and four members of the Colorado Mountaineering Club (C.M.C.), of Denver, were flown in to assist in the rescue.

Due to the remoteness of the crash, no rescue operations were attempted on Thursday, although two U.W.O.C. members and a Civilian Air Patrol official climbed to the wreck and ascertained that there were no survivors. The University of Wyoming opened its summer Science Camp, located six miles from the wreck, as a base for the task ahead. This proved of inestimable value, since the only alternate base was Laramie.

Medicine Bow Peak is an east-facing scarp several miles long and trending roughly north-south. The crash occurred about one-half mile south of the main peak at an elevation of approximately 11,600 feet. The face at this point consists of massive quartzite beds dipping east at 70 to 85 degrees. The plane crashed less than 100 feet below the crest and lodged on a diabase ledge which cuts irregularly across the quartzite beds. This ledge lies halfway up the 600-foot face. Below the face is a long steep talus cone which fans out to an intersection with two small lakes and a series of rock ramparts, in part morainal and in part remnant talus accumulations. These lie some 500 feet below and 600 feet out from the base of the cliff. A quarter mile beyond these lakes passes U.S. Highway 130, connecting Laramie and Saratoga. The terrain between the highway and the lakes is quite rough, suitable only to foot and horse transportation, although a jeep was eventually able to make its way in.

The ledge holding the wreckage is about 30 to 45 feet across, but slopes steeply outwards and is partially grass-covered. The wreck was dis-

tributed in two main areas, which were also the points of accumulation of bodies. At the base of the ledge and at the head of what we later called the middle gully were the tail assembly and the rear section of the fuselage, under each of which was wedged an indeterminate number of bodies. Our first estimate was 20 to 25, but this proved to be too low. Four or five others were scattered above the fuselage. Higher by 60 feet and to the left was a quartzite ledge above the diabase on which were strewn some badly burned airplane parts and approximately 20 bodies, equally scorched. Above, scattered on numerous small inaccessible ledges we could see bits of wreckage. Below, at the head of the talus cone stemming from the middle gully, were airplane parts that had dropped from above, together with two bodies.

A light mantle of fresh snow lay over the area, making passage of the boulder areas treacherous. Thursday was cold, clouded, and windy, which seemed to confirm the weather forecast of snow. We received an unexpected break in the weather, however, and the next four days were clear, warm, and relatively windless for that area. We finished bringing out the bodies on Monday afternoon. Tuesday morning it snowed.

The original organization of the parties to work Friday, the first day of rescue operations, broke down into six teams of about six men each. Each team was headed by a UAL employee, and three of the teams were equipped with handy-talky radios. It was deemed necessary to have a UAL employee as team leader because he could be counted on to know what the requirements were in a job such as this. Perhaps half of the original team members were mountaineers. All of these six teams were to work above, where the wreckage was lodged. Additional groups were formed for the work below.

We figured to work two parties simultaneously, one at either major piece of wreckage, extricating bodies and wrapping them in canvas. From there they would be lowered or carried to a third party working on the face of the cliff. The bodies would then be worked down the face of the cliff by a system of ropes. Additional teams below would carry them out in litters to where they could be horse-packed to the road. From the road they were to be taken in trucks to the temporary morgue set up at Science Camp. We knew that eventually we would have to ascend the cliff above or rappel from the top to make sure that we had covered all the possible areas where bodies might be lodged.

As the day progressed we found the rope-lowering system to be inadequate. Even though the face dipped at an angle of 70 to 85 degrees, the

bodies repeatedly caught on promontories. It forced us to climb down the face and guide the body down at the same time, a process too dangerous and too time consuming to be practical. Further difficulties were encountered above, where the danger from falling rock increased. Not only did those working above inevitably dislodge rocks upon those below, but also pieces of airplane periodically clanged their way down the mountain, either carried away by a gust of wind or seemingly falling spontaneously. This meant that all parties except the highest were continually ducking for cover as the warning cry "Rock!" or the thin metallic reverberation of an airplane part echoed down the face. It was obvious that there were too many parties working independently, and that the task needed someone in over-all charge on the mountain, and that those without mountaineering experience were at a distinct disadvantage. Furthermore, it was urgent that we devise another means of lowering the bodies to the base. Only four bodies were delivered to the morgue that day, and two of these were from the wreckage at the head of the talus.

During the evening meeting with the UAL officials the climbers requested the following things:

(1) the establishment of a high line from the head of the middle gully to Base.

(2) fewer parties and fewer people on the mountain, and a much smaller percentage of non-mountaineers on top. These requests were readily granted.

Saturday morning at Base Camp one of the University of Wyoming climbers was designated leader of the cliffside operations. The organization for the day was as follows: a party of two from R.M.R. was sent by a long route to the top of the cliff, where they were to survey from above to locate bodies lodged on the higher ledges. The remaining members of R.M.R. were to clean up around the wreckage on the quartzite, that which was above and to the left of the tail assembly and rear fuselage. The Wyoming University mountaineers and the four C.M.C. men were to work at the tail assembly and handle the high line. No one was to work above a party unless permission was given, because of the danger of falling rock. Should the R.M.R. party, working on the higher ledge, feel that precautions would not eliminate the rock danger, they would request the middle gully be cleared.

While this was going on the high line was installed. Anchored at Base Camp, some 500 feet below the wreck, and perhaps 600 feet out from the

face of the cliff, was a ¼-inch six-strand nylon-cored steel cable, the other end of which was snubbed around a rock outcrop above and clamped with six cable clamps. To this static line was attached a trolley consisting of a single 10-inch bearing-mounted snatch block, hooked into and secured to a carabiner. The carabiner was tied directly to the body bag by from four to six lengths of ¼-inch Manila rope. The Manila was used to draw the sack up and to distribute the load over the six handles of the body bag. Attached to the snatch block was a 1,200-foot $\frac{7}{16}$-inch nylon rope which was used as the brake and haul line. This line was passed through a series of pulleys, used only to change the direction and to eliminate rock friction, and extended back down the mountain to a haul party below. Its length was increased by tying in an additional 1,000-foot ½-inch Manila rope (all of which was not needed). Due to the elasticity of nylon rope, Manila would have been preferable for the brake line. When the body was attached to the trolley, it was shoved off and allowed to descend to the lower terminal, the haul party braking the line gradually when required. The body was removed at the base and the trolley hauled back up the mountain.

The upper areas were cleared by Sunday afternoon, permitting R.M.R. to depart for Boulder. We found the optimum number to work on the mountain to be between 14 and 20. One man was detailed as permanent radio operator.

It may be asked whether anyone found himself unable to work in the proximity of the bodies, considering that they were all in quite bad shape. Once the initial shock was over, the urgency of the task and the necessity for constant work overcame any tendencies to nausea. We found it advisable always to give a newcomer time to look around before he was given a task.

All the work done on the upper face and on the quartzite ledge was done by the R.M.R. One body was found on a ledge some 150 feet above the diabase ledge and had to be tied and lowered by a person who had rappelled from the top. The rest of the face was investigated by rappelling down 300 feet from the top and swinging from side to side to give complete coverage. The quartzite ledge itself produced about 20 bodies, which were wrapped on the spot and lowered to the trolley by ropes. Considerably dangerous work was involved extricating bodies from loosely perched pieces of wreckage. Most of this was accomplished Sunday morning, during which time it was necessary to keep all workers out of the middle gully.

ANALYSIS

A mountain crash such as this one, in which the plane remains lodged on a virtual cliffside, is probably exceedingly unusual. Nevertheless, we should like to offer suggestions on organization and equipment in case our effort should have to be duplicated.

Where a large number of bodies is to be evacuated over terrain this difficult, a high line is certainly advisable. Rope lowering cannot be done successfully on anything less than a sheer 90-degree face. A high line also saves packing bodies out over talus and moraine. Such a rig requires cable, rope, pulleys, carabiners, pitons, piton hammers, swivels, and numerous other items. A regular tramway, such as one of the standard U.S. Army sets, would be desirable if there is a good location for the upper terminal. It is suggested that airlines consider the inclusion of this equipment in their crash kits.

U.S. Air Force body bags, made of a coated fabric and equipped with a full-length zipper and six handles, are infinitely superior to simple canvasses in which the bodies must be wrapped. The condition of the remains is often such that use of a canvas wrap is not feasible.

Handy-talky radios are necessary items of equipment and are particularly useful if they net with state police channels.

Trained mountaineers are required for this type of rescue. It is suggested that mountain rescue teams around the country prepare themselves for this type of operation and register with airlines which service their area.

Henry P. Karstens—1878-1955

FRANCIS P. FARQUHAR

No one has been more intimately connected with Mount McKinley than Harry Karstens, who died November 28, 1955, in Fairbanks, Alaska. He lived the greater part of his life within sight of the mountain, and it was never far from his thoughts. He was the climbing leader of the first complete ascent of McKinley's highest peak, the loftiest point in North America, and was the first superintendent of the National Park which was established to embrace that great mountain area with its abundance of wild life. Henry Peter Karstens was born in Chicago in 1878. In 1897, as a young man of 19, he came to Alaska to try his luck in the gold rush. He was too active and energetic for the grinding work of placer mining and soon took up what was then the truly heroic occupation of transportation—dog teams in the winter and river launches in the summer. In the winter of 1903 he brought the first mail by dog team from the Copper River to the newly established town of Fairbanks. From that time on he was a Fairbanks man. There are many tales of his skill and fortitude on the long winter runs over the snow. When Charles Sheldon, naturalist and big-game hunter, came to Alaska, Karstens was for several seasons his companion and assistant. In his book, *The Wilderness of Denali,* Sheldon pays high tribute to Karstens' sturdy qualities. It was at this time that Harry began to make definite plans to climb Mount McKinley. He wanted Sheldon to go with him, but when that didn't work out he began to pay more attention to the letters of Hudson Stuck, an Episcopal missionary at Tanana. Stuck had long wanted to try the climb, but lacked the strength and experience to undertake the leadership alone. In Karstens he found a partner with just the qualities he needed, and presently an agreement was entered into by which Stuck was to provide the equipment and provisions, while Karstens was to furnish the leadership on the mountain. Before they started in the spring of 1913 they were aware of the discovery of the Muldrow Glacier route by the Sourdough party of 1910 and the almost successful exploitation of the route in 1912 by the Parker-Browne party. Following very closely the steps of the pioneers, the party of four—Karstens, Stuck, Harper, and Tatum—favored by perfect weather on the final day, overcame the few hundred feet that had been denied to Parker, Browne, and LaVoy and, on June 7, 1913,

stood on the highest point. (Stuck: *The Ascent of Denali,* New York and London, 1914; Farquhar: "The Exploration and First Ascents of Mount McKinley," in *Sierra Club Bulletin,* June 1950.)

Soon after Mount McKinley National Park was established, Karstens was appointed its first superintendent. He served from 1921 to 1928, supervising the construction of entrance roads and trails and the park headquarters and ranger stations, as well as organizing the ranger force to protect the game. Subsequently he engaged in business enterprises in Fairbanks and in later years usually spent the winters in Texas or Colorado with his son. He is survived by his wife, Louise, and by a son, Colonel Eugene Karstens, U.S. Air Force.

Success on Kangchenjunga

EDITORIAL

THE ascent of Kangchenjunga last year by the party led by Charles Evans deserves a good deal more acclaim than seems to have been accorded it. In several respects it was a greater mountaineering achievement than the ascent of Everest. Although not quite the highest mountain in the world it is so close to it as to be definitely in the same pre-eminent class. But in sheer magnitude, in the vastness of its quadruple system of glaciers, in its enormous cliffs, and in its interminable ridges, it is unequalled on the earth's surface. Moreover, until Evans undertook to solve its problems last year it seemed as if it might be the one great mountain in the world that could not be climbed. Evans' success in finding a route must stand as one of the most brilliant performances of major mountaineering. But equally worthy of note was the organization of the party and its conduct during the operation. For these reasons the Kangchenjunga expedition of 1955 should be studied again and again as a model of great mountaineering.

In reading the brief account in this *Journal* one may not be aware at first of the full significance of Charles Evans' restrained and modest phrases. But the story is all there and by a little study one can expand it and gain a more comprehensive view of what took place. First, it is apparent that the experiences of the past and the topographical information produced by earlier expeditions and surveys were studied with microscopic care. The brevity and clarity of the exposition of the features of the mountain and the earlier attempts upon it reflect the assurance of the skilled surgeon. Next, the concise account of the movements of the party indicates a combination of deliberate planning and prompt adjustment to changing circumstances that bears the stamp of the experienced leader. In regard to the personnel, Evans almost casually mentions the basis of selection; but actually this should rank as one of the most important points in the achievement, for it was Evans' conception of a sound party that resulted in harmonious teamwork and success for all. And in this point one finds the answer to the question that many have asked: Why, if all was going so well in the high camps, didn't Evans himself go to the summit? To anyone who knows Evans the answer is simple; but it may also be read in the following words from his account, "While the two summit pairs

made these highest climbs Dawa Tenzing and I would stay at Camp 5: *there we could support the climbers above and be a link between them and those below.*" That was the place for the leader, and I doubt if Charles Evans ever considered leaving it for the mere personal satisfaction of going to the summit—certainly not for the fame.

There are many other aspects of this expedition that may be studied as models: the modest approach—Charles wrote from Calcutta that he was on his way for a little reconnaissance of Kangchenjunga; the joyous meeting with the Sherpas—old friends who were to be companions on another jolly party; an emphasis on enjoyment of climbing for its own sake; a welcome silence surrounding the hardships, the weariness, the frustrations, and the dangers—they occurred, to be sure, but they were endured or overcome; no mention of a flag-raising on the top—it might have been appropriate for someone to have carried up a Welsh flag, if they could have found one, in honor of Charles Evans—the nearest approach to a national salute was the honoring of the promise to the Sikkimese that no foot would tread upon the sacred summit. In these remarks it is not intended to deride, or even to smile, at events on other expeditions, but rather to point out how delightful it is to have something different, especially when it occurs on one of the greatest climbs of all time.—F. P. F.

Various Notes

EDITED BY H. ADAMS CARTER

UNITED STATES

Tetons, Wyoming. In the past summer several new routes were made in the Tetons. A few of the more important climbs follow.

Traverse between Bivouac and Raynold's Peaks. Lying between Moran and Snowshoe Canyons is one of the most spectacularly pinnacled ridges of the Teton Range, which Leigh Ortenburger has labeled as "terrific." After Bill Buckingham and I had reached the summit of Bivouac Peak by the ordinary route by midmorning on September 4, we started for Raynold's Peak far to the west. Lying between us and our goal was a twisting, crumbling, knife-ridge, which lived up to Ortenburger's evaluation. The actual climbing of the ridge proved not too difficult, it being clearly a problem of endurance and extreme care on the decomposed rock. Bill and I climbed all the major pinnacles, at times even rocking back and forth the summits of the smaller spires. Our greatest problem was water, and toward the end of the ridge a nearby lake was so tempting that we happily descended for refreshment. After this brief respite we took once again to the ridge and soon found ourselves on top of Raynold's Peak. In all we took 11 hours for the traverse and all night for the return to Jackson Lake via Moran Canyon. JOHN FONDA

West Ridge of the Middle Teton. The long west ridge of the Middle Teton was ascended for the first time on August 4, 1955, by William Buckingham and Mary Lou Nohr. From the south fork of Cascade Canyon we followed a broad couloir into the lower end of the basin between the west ridges of the Grand and Middle Tetons. From there we climbed the ridge over numerous large towers to the section of small pinnacles just before the point where the west ridge abuts against the Middle Teton itself. These pinnacles proved to be extremely rotten, and we climbed only a few, traversing the rest on the south side. There followed a difficult chimney, a bit of airy face-climbing and finally several hundred feet of scrambling before we stood on the summit, just 12 hours after we had left Jenny Lake. WILLIAM J. BUCKINGHAM

Ascents in Avalanche Canyon. In June and July Graham and Mary Ann Matthews climbed from Avalanche Canyon. They made the ascent of an unnamed pinnacle east of Mt. Wister, quite obvious from the highway

but evidently not previously climbed. A fine climb was that of the south face of Cloudveil Dome, a route that had long attracted attention. It turned out easier than expected, but offered varied and interesting climbing from class 3 to class 6. GRAHAM MATTHEWS

South Face of Disappointment Peak. Near the end of August Dick Pownell suggested that I make a new route with him on the south side of a subsidiary buttress of the Disappointment Peak ridge between Surprise and Amphitheater Lakes. The route requires about three hours. Several pitons were used for anchors. The majority of leads were class 4, a few being class 5 where protection was desired. We began the climb at the western edge of the face and then traversed right (east), where we reached the ridge quite far down from the summit. At this point there is a choice of proceeding unroped to the summit or crossing, also unroped, the remainder of the face to the outlet of Surprise Lake. ALLEN STECK

North Face of Disappointment Peak. Two routes, one direct and the other on the western edge of the face, were pioneered by William Cropper and John Dietschy on August 4 and 15. The direct route on the previously unclimbed face involved a very difficult struggle with a five-foot overhang which was finally climbed by arm-strength rather than direct aid.

Northeast Chimney of the Middle Teton. On September 4 Donald Goodrich and John Reppy climbed the more easterly of the two prominent chimneys which cut the north face of the Middle Teton. Some ice increased the difficulty near the top of the chimney.

LEIGH ORTENBURGER

Grand Teton Direct North Face. Despite the fuming comments of the guide (Willi Unsoeld), Jolene Unsoeld (wife) dallies in bed at Amphitheater Lake until 5:30 A.M. The first ascent of the north face took 18 hours from the foot of the face, but Jolene hates early starts. By 8:00 A.M. they have climbed the Teton Glacier, deposited ice axes and crampons in the bergschrund and are ready to start up the face itself. Up to the third ledge very good time is made, only four and one-half hours being required for this first three-quarters of the face. The best explanation of the time is Jolene's attitude toward belaying. Before they left the bergschrund, she told her guide that she had just read Wexler's mathematical treatment, "The Theory of Belaying" and that it gave her such a headache that she resolved upon the spot to have nothing further to do with the subject. It is thus unnecessary for any leader of her rope to bother snapping into

pitons since such actions are superfluous when unsupported by any belay. Teton guides being accustomed to such attitudes, much time was saved thereby.

From the third ledge, the fourth is reached by a route some 150 feet to the east of that used by the four previous successful parties. This is quite close to the beginning of the fourth ledge, just to the west of the first big inversion which turns a section of the ledge into a ceiling. After one follows the fourth ledge for 50 feet, it suddenly disappears in a rocky corner, continuing only as a narrow crack slanting up across the sheer face. This stretch is about 10 feet long but requires an assortment of pitons topped off with an airy sixth class swing on a sling. The ledge re-emerges from the wall again, although rather slowly for a few feet. Before the regular route is intersected, the ledge again inverts twice, but each is bypassed by working out onto the face below by taking advantage of some thin cracks and ledges. Exposure during this traverse is spectacular with the rope giving its unsatisfactory protection customary to traverses.

Jolene has gamboled along rippingly to this point, but now, with the last serious pitch before her, her legs begin to quiver and she has to approach the traverse into the "Vee" relying mostly on her arms. At the start of this final pitch her arms give out as well, but her trusty guide is ready with his Little Gem Client Hoist and soon they are on the summit. The time is 5 P.M., which gives plenty of time for the stroll down to the Guide's Camp on the Lower Saddle. WILLI UNSOELD

New Variants on the East Ridge of the Grand Teton and on Teepe's Pillar. Yves Erikson and William Briggs made a new variant on the long east ridge of the Grand Teton in early August. After a 4:15 A.M. start from Amphitheater Lake, they climbed unroped to the base of the Molar Tooth, the first tower on the ridge. There in the left (southeast) side was a tempting 300-foot chimney leading to a balcony of broken rock below the summit block. The chimney was not particularly difficult, although two odd overhangs made it interesting. Once on the balcony they traversed around the left corner to a south shoulder separated from the tower by a fine, 80-foot jam crack. However, they shunned this obvious route and attacked the east face of this shoulder, only to have the route give out 15 feet from the ridge top. After considerable time they drove a piton behind a poor flake and managed a delicate traverse to the left where better holds enabled them to reach the summit. After some scrambling and a short rappel into the notch behind the tower, one lead brought them onto easy going, and they gained the summit of the Grand Teton at 1:15 P.M.

The next morning John Morrison and Briggs climbed the north ridge of the Middle Teton by 9:30 A.M. From there they traversed to Teepe's Pillar via the black dike. They disliked the looks of Hans Kraus's chimney on the northwest ridge and decided to vary the route by climbing to the right. Here, about 20 feet down from the col, Briggs traversed farther to the right and continued up a rope length to the base of a chimney, the key to overcoming two overhangs. After jamming up five feet of the chimney, he moved left with footholds on the lower and handholds on the higher. A five-foot traverse in this fashion led to cracks bypassing the upper overhang and leading to the ridge. There they joined Dr. Kraus's route and followed it to the summit. WILLIAM BRIGGS

West Face of the Devil's Tower, Wyoming. In the latter part of July Jim McCarthy and I arrived at the Devil's Tower, Wyoming, hoping to put up a new route on one of the previously unclimbed faces. The tower is granite, with vertical fractures (resulting in the well-known hexagonal columns) which offer numerous possibilities for artificial climbing. We chose a route beginning in an inside corner between two columns on the west face. Using stirrups and double rope, Jim McCarthy led 120 feet, with one belay from stirrups, to a small ledge beneath an overhang. We continued by traversing right to a vertical V crack, which we ascended for about 150 feet to a large overhang, again using artificial aid. Fortunately there were two belay points available on the tops of broken columns. After a free pitch over the left of the overhang, we tried what looked to be an easy vertical crack. It proved unexpectedly difficult, there being a lack of both holds and piton cracks. The remainder of the climb was of only moderate difficulty, proceeding through the heavily broken area at the top of the tower. The climb required three days to complete, no climbing being done after noon because of the heat. We rappelled down, leaving the ropes, and reascended the next morning, using prusik knots. About 75 pitons were used. Jim McCarthy led the difficult pitches, using artificial aid entirely on the first 250 to 300 feet. JOHN RUPLEY

First Ascent of Open Door Pinnacle, Wyoming. South of Grand Teton National Park, about 25 miles from the town of Jackson on U.S. Highway 187, a gravel road turns northeast up Granite Canyon. Eventually the road leads to a small Forest Service recreation area 10 miles from the main highway. The reserve includes a waterfall, a hot spring and several cabins. Naturally heated water from the spring supplies a concrete swimming pool. Delightful though these facilities are, the climber will likely be distracted

by the imposing limestone pinnacle which rises directly back of the swimming pool. Actually the tower is a partially detached buttress of a much larger and considerably higher massif known as Open Door Peak, but because the tower juts out toward the road, it dominates the scene as the visitor approaches the recreation area. The origin of the name is immediately obvious. On the western face, fronting the road, is a deep recess, rectangular in shape and of majestic proportions, which strikingly resembles a doorway. On July 31, 1955, Roald Fryxell and the writer, starting from the hot spring, climbed up the brushy slope leading to the tower and found that its walls were indeed as sheer as they had appeared from below. The most likely route appeared to start from the col between the tower and the principal mass of the mountain. To avoid the exceedingly rotten cliff below the col, we circled far to the left up onto the adjacent mountain and descended to the col from above. The last 60 feet of this descent was over rock even more shattered and disintegrating than the cliff we had just abandoned, but at least we had the security of a rope. We gingerly rappelled down and found the col itself reasonably stable. From here, after a respite for lunch, we started up the wall of the tower. The rock turned out to be rather more secure than we had expected, though by no means up to Teton standards. After 95 feet of high-angle cliff where we used five pitons, we reached a broad talus bench, from which it was a scramble of 80 feet or so to the top. There was no cairn, nor could we find any evidence of a previous ascent. After an hour on top we climbed down to the talus bench where we attached a sling loop to a solidly rooted tree. A 95-foot rappel brought us to the col, from which we dropped down 40 feet to the scree slopes by means of a second rappel. Three smaller pinnacles nearby proved interesting enough to climb. None offered any difficulty. The highest of these is more or less the twin of the Open Door, though it has no "doorway." Presumably it has been climbed many times. The route from the back side is obvious. FRED D. AYRES

South Face of Pilot Peak, Absoroka Range, Montana. Knowing only Pilot Peak's name, its location and the fact that Phil Smith had climbed it previously, on July 31, 1955, Bill Buckingham, my wife Jean, and I followed Fox Creek as far as the limestone formation which contours around the mountain's base. There we turned left out of the creek bed and traversed up a breach in the formation out of the forest and into the meadows which stretch below the north face of Pilot Peak. We discovered there that although from the east the mountain bears a striking resemblance to the Matterhorn, at close range it reveals its true nature as a crumbling

dolmen of volcanic rock. Climbing this face was out of the question; rock was constantly falling from it. A herd of mountain sheep enticed us to the ridge between Pilot and Index Peaks. We assumed that if we could flush them higher up, they would show us an easy way up, but as we followed them around the western ledges on what was not quite rock and not quite earth, we wished for crampons. We were forced many times to deviate from their route to suit our feeble attempts at climbing. The western ridge brought us to the final summit pyramid. The summit looked about three extremely difficult leads away. We followed a large scree-covered ledge along the southern base of the pyramid until we could go no farther. Rockfall danger indicated that a party of three would be most unwise, so Jean volunteered to wait on the broad sunny ledge. Bill led the first two pitches and amid crumbling hand- and footholds drove three pitons for psychological reasons. Horribly exposed and absolutely vertical, the second lead, at the most, boasted of three finger pinch holds. For 20 feet there was nothing of any comfort. This lead was a true mountaineering nightmare, and Bill's ascent of it testifies to his climbing ability. The next lead, an overhang, I led only with the idea born of despair to get the mountain climbed and get home. From the top of the overhang we climbed up a shallow gully, bearing right occasionally until the summit rocks were in sight. On the top we found only a shipwrecked cairn, but no record of Smith's ascent. The eastern side of the mountain has, I understand, an easier and less dangerous route to the top. The crowning blow came a few days after the climb when a letter from Smith informed us that on the first ascent a ram's skull was found on the summit. JOHN FONDA

Olympic Mountains, Washington. I spent a month in the Olympic Mountains of Washington this summer, fortunately during the driest August on record, and enjoyed a whole month of sunshine. While surveying we ascended several of the peaks surrounding the Mt. Olympus massiff. We were surprised to find that some of these bore no record of ascent, although they are within easy reach of campsites used for the ascent of Mt. Olympus, annually climbed by scores of climbers. Names of Greek gods and goddesses seem appropriate for these 6,000- to 7,000-foot peaks. None of them is technically difficult, but their alpine setting around the glaciers of Mt. Olympus makes them delightful ascents. The most striking of these minor peaks is "Mt. Hermes," a sharp rock summit located east of the Hoh Glacier. EDWARD LACHAPPELLE

New Ascents in the Cascade Range. Early in the summer of 1955 two new climbs were undertaken in the Washington Pass area of the Methew

Cascades. One, a new route of difficult standard, the southeast buttress of The Temple, on Kangaroo Ridge, was accomplished by John Parrott, Louis Pottschmid, Herb Staley, and Fred Beckey. The crucial portion of the ascent was an exposed chimney with divergent, smooth, flaring walls. On the nearby Liberty Bell massif, John Parrott and Fred Beckey made the ascent of the only unclimbed summit of the five in the group, Concord Tower. The climb involved a certain amount of tension climbing in addition to the use of three bolts to overcome some short, crackless overhangs.

In the Cashmere Crags the "White Feather" of Three Feathers was scaled by John Parrott, Bob Lewis and Fred Beckey. After several hundred feet of class 4 climbing, the summit monolith rises flawlessly above an exposed granite crest. Its ascent was entirely artificial, requiring the use of 10 bolts—a very full afternoon's work in slings.

Numerous pinnacles on the west ridge of Mt. Stuart and Peak 8700, one mile to the east of Stuart, were climbed by Art Maki and Fred Beckey. Although some of these summits appear difficult from the distance, none imposed any problem. In fact, the rope was seldom required.

Waterfall Column, adjacent to Drury Falls on the south side of Tumwater Canyon, was climbed for the first time on June 6 after several preliminary attempts. A long, exposed final overhang required the use of pitons, bolts and wooden wedges for direct aid. FRED BECKEY

South Face of Brazos Peak, New Mexico. An excellent climbing area exists on the south face of Brazos Peak in northern New Mexico. The face varies in height from 500 to 3,000 feet, the angle from 60 degrees to vertical. The cliffs, which are readily accessible from a road leading to Corkins Lodge by leaving U.S. Highway 84 at Park View, extend for several miles and are composed of extraordinarily sound rock. Two routes have been completed on the face. Known as "Easy Ridge" and the "Great Couloir," they are the most prominent ridge and the couloir leading rather directly to the summit. Each involved about 2,000 feet of roped climbing and the use of about 10 pitons, mostly for safety. Each route was completed on the third attempt. Most of the face remains to be explored, but I do not hesitate to recommend the area as a playground for rock climbers. The peak can be ascended from the north by jeep almost to the summit.

GEORGE BELL

CANADA

Mt. Robson. Fred Ayres and Dick Irvin made a variant of Kain's original route up Mt. Robson in the summer of 1955. Instead of climbing the

steep, often ice-covered rocks above the Dome to reach the southeast ridge they kept to the right as you face the mountain and climbed the hanging glacier in its center. It is less steep and, particularly early in the season, it is merely a question of kicking steps. They feel this route is both easier and safer. H. A. C.

Mt. Kitchener, East Ridge. We had been attracted by the advantages of a new and shorter route up Mt. Kitchener which would avoid hours of toil on the Athabaska tongue and the Columbia Icefield. In the early hours of July 25 we (Fred Ayres, Don Claunch, and Dick Irvin) set out over the terminal moraines of the Dome Glacier, which separates Snow Dome from Kitchener, and toiled up the deceptively short glacier. Finally after reaching a point below the col between Kitchener and its easterly neighbor, K2, we labored up the monotonous, broken shale slopes to the col. In gathering clouds we ascended the steep but not really difficult east snow ridge, crossing several crevasses, until apparently not far from the summit we clambered over the rocks onto a flat platform where we found a small cairn but no message. Beyond was a gap in the ridge and beyond and above, more mist shrouded rocks—we were on a pinnacle! Our distant reconnaissance of the route had disclosed no gap or irregularity in the ridge; a poor joke on the part of the mountain, we thought.

The cleft was of distinctly inferior design with both sides composed of loose vertical shale, and the bottom, 75 feet below, a steep ice chute capped by an unstable cornice. Fortunately the mists were now thick enough to prevent our seeing the total exposure. Belayed by Fred, Dick moved down the rocks to an icy patch, chipped tiny holds for fingers and spikes, then crossed to more rock and let himself carefully down onto the snow of the cornice. The snow seemed solid enough, so he crossed the gap and sunk in his ice axe for a belay. It went in distressingly easily; to his dismay he discovered that it went right through the cornice! Knowing that you cannot have everything, he called for Fred to join him. You can imagine his surprise when he saw Fred slip and start to fall. Don held the slip and Fred joined him at the belay spot. After encouraging Fred to find a better place for his axe, Dick started to lead up the west side of the notch. The first few steps were snow, followed by ice, then rock where we had to shed crampons, gloves, axe, pack and goggles. There was just enough rope to reach a welcome belay spot at the top of this pitch. It is difficult to understand how rock can be so loose and so steep at the same time. Occasionally I have my doubts about Newton. Fortunately our fear of more gaps did not materialize, and a short scramble took us to the ice.

A few swings of the axe and we stepped out onto the icefields; only a trudge remained to the top, elusive though it was in the mist.

RICHARD IRVIN and DON CLAUNCH

Rearguard North Face. Although Rearguard, Robson's 9,000-foot subsidiary peak, is normally a very easy climb, its imposing northern rock face, towering 3,500 feet above the valley, had never been conquered. A steep northerly snow couloir had previously been scaled, but the rock wall still presented a challenge. Ellis Blade and Joan Crosby of the Alpine Club of Canada, Mike Shor of New York City, and I crossed the icy stream channels opposite the Alpine Club of Canada's camp early on the morning of August 5 and scrambled up the 1,500 feet of brush and talus slopes below the final 2,000-foot rock face. This we attacked to the right or west of the snow couloir and found the climbing a combination of moderately difficult and fourth-class terrain, long, exposed and thoroughly pleasant. Route finding was a bit tricky, and the rock was often quite loose. However, if we had not chosen the right route, the difficulties would have been greatly increased. We had to scale several cliffs and terrace bands. With the Alpine Club Camp almost at our feet and the North Face of Mt. Robson close at hand, in the perfect weather and on the interesting rock it was a stimulating experience. In my opinion this tour constitutes a fine but not easy training climb for the longer rock climbs.

DON CLAUNCH

Mt. Louis. Essentially the route up Mt. Louis that I did in 1952 with Walter Perren, the Zermatt guide then with the CPR in Lake Louise, was identical with the standard one to the base of the final tower. There it diverges to the right (direction of Banff) up a series of slabs and small faces, where we used three pitons for safety. The great advantage of it is that it obviates that miserable chimney, which is nowhere really wide enough for a portly citizen like me. HAROLD B. BURTON

Odoray via the Northeast Ridge. The northeast ridge of Odoray is the steep righthand skyline of the mountain when viewed from the Canadian Alpine Club hut in the O'Hara Meadow. Don Morrison and I set out from the cabin about 6:00 A.M. on July 19, 1955, and reached the base of the climb an hour and a half later. This begins where the wooded ridge between Morning Glory Lakes and Linda Lake abuts against the rock wall. Odoray's northeast ridge is rather a combination of ridge and face, made up of a series of 20- to 60-foot high rock bands; the lower ledges are fairly

wide, but higher up they narrow. The rock is generally good but loose in a few places. All the climbing is quite difficult, and belays are scarce.

After starting directly up the ridge, we soon climbed diagonally upwards to the right, bringing us onto the face above Linda Lake. The fourth pitch took us straight up to a grassy ledge where we continued to the right to another ledge 40 feet higher. Here the choice was not easy. We finally followed the ledge to the right around a corner and diagonally up and across a bulge of loose rock into a slight depression running up the face. This we ascended, using thin and untrustworthy holds to a scree shelf which ran up to an overhang sporting a jagged flake of rock on its right. Don tried the overhang and found it the first "hard" lead of the climb. A few easy feet bearing left and some difficult ones brought us to a slimy, downward-sloping ledge. It was a difficult pull up on rounded crumbling holds on the top side of a small but awkward overhang (the second really difficult pitch). Three more pitches diagonally left toward the ridge proper brought us to an ugly, steep, ice-filled gully. Don led up the quite easy rocks on the left of the lower part, across the ice to the rocks on the right, up at the edge of the ice for about 80 feet, then straight up the right wall of the gully for another 40 feet to a sloping ledge with a good belay. From there we crossed back to the left side and climbed a 30-foot wall to escape from this dungeon and regain the ridge proper. All the way up we had awe-inspiring views of Linda Lake right under our feet at the bottom of the gully. After two more difficult pitches, we climbed a tricky, narrow chimney in a wall of loose rock. We then moved slightly to the right up 150 to 200 feet of steep snow, and then up easy rock to the point where the ridge rests in its meteoric rise toward the summit. We scrambled across the horizontal hundred feet or so to the base of the summit block, a steep and forbidding structure of the notorious rock of the black band, cut by two foul-looking chimneys. The narrower one to the right looked the lesser of the two evils and proved easier than we had expected. Above, we scrambled over black rubble to the final slope, a knife edge of treacherous, rotten snow, curving gracefully to the very summit. There are over 3,000 feet of rock to climb on this route, which took us ten and three-quarter hours from base to summit.

Victoria by the South Face. During our stay at Lake O'Hara we also made the first 1955 ascent of Victoria, and that by a new route up the south face. We cut diagonally up and across the moraine at the foot of the valley between Huber and Victoria and climbed the south cliffs of Victoria with a fine view down to Lake Oesa on the right and across to our left an imposing view of Huber. The climbing was straightforward

until we were confronted by a tremendous cliff band which appeared to overhang its base all along. We contoured to the right and continued up the cliffs until we reached the black band, through which we climbed in a chimney of three pitches. The last pitch necessitated a lay-back. This brought us to the prominent step on the regular route about 1,000 to 1,500 feet above Abbot Pass. From there to the summit we followed the orthodox route. This route is more direct and offers more and better climbing than the regular route from the O'Hara side (that is, around Huber, across the Huber Glacier and up the Western cliffs of Victoria).

JAMES TARRANT

Mt. Forbes and Mt. Freshfield. Early in the 1955 season, Don Claunch, Richard Irvin, and Fred Ayres back-packed up the Howse Valley, ascended the Glacier Rivers, and set up a high camp at timberline between Division Mountain and the east lateral moraine of Mons Glacier. From here on July 2, we started for Mt. Forbes at 11:00 A.M. after a night and morning of heavy clouds and intermittent rain. We climbed up the north Glacier to the west col of Forbes, then followed the west arête to the summit (6:30 P.M.). This early in the season the route was almost entirely snow. We returned by the same route and reached camp at 9:30 P.M.

After descending to the outlet of Glacier River, we continued up the Howse, following the newly improved trail on the east side of the valley, then turned southwest up the gravel flats of Freshfield Brook, fording several streams. At a point not far from where Forbes Brook issues from the forest, a good trail leads south and west over the ridge to the outwash flats of Freshfield Glacier.

It should be noted that a faint trail also starts along the north side of the box canyon of Freshfield Brook. This route is more scenic than the previously mentioned trail, but anyone attempting it with a heavy pack should steel himself for an arduous two or three hours of heavy going. The trail soon deteriorates into virtually nothing.

We camped on Niverville Meadows, justly famed for their lovely setting and for the magnificent view which they provide of the Freshfield group of peaks. After waiting out a day of rain, we climbed Mt. Freshfield (July 6) in dense fog, consuming the entire day in confused blundering before we finally found the summit at 6:00 P.M. After two more days of rain, the weather cleared, but there was time then for only a quick ascent of Mt. Niverville on a gorgeously brilliant morning, after which we started out for the highway.

FRED D. AYRES

Mt. Bryce. On July 23, 1955, Richard Irvin and Fred Ayres made the third ascent of the main peak of Mt. Bryce. Our route was via the south glacier and southeast face, the same as that used in 1937 by the second-ascent party consisting of Lillian Gest and Kate Gardiner, with the guides Christian Häsler and Edward Feuz, Jr. We started from the vicinity of the Saskatchewan Hut and back-packed via the Saskatchewan Glacier, Castleguard Meadows and Thompson Pass to a campsite at about 5,600 feet on the dim, very dim North Rice Brook trail (see Boundary Sheet 21). Scarcely anything remains of this trail except the blazes, but the hiker is well advised to follow them. They serve as route markers and help to avoid some of the worst of the down timber. In contrast, the trail (not shown on Sheet 21) from the southern limits of Castleguard Meadows down to the crossing (ford) of the swift Castleguard River at 5,600 feet is in excellent condition. From here on, the trail, still in fair shape, follows the dashed red line shown on the map past Watchman and Cinema Lakes, becoming more vague as Thompson Pass is approached.

To reach the lower end of the South Glacier from North Rice Brook requires considerable bushwhacking, whatever the route. Certainly our attempt to conserve altitude by turning diagonally up the mountain from the 5,500-foot level on North Rice Brook proved futile. Rough terrain and alder slides cost us much in up-and-down climbing. Once on the south Glacier, the climber can gain 3,000 feet of elevation without much trouble, provided the snow is in good condition. The long upper section of the glacier leads to a distinctive col with a gendarme rising in its center. From here the route turns westward up the southeast face, a final thousand feet of stepped-back limestone cliffs, partly covered by snow and ice. The summit is a long narrow ridge capped with a snow cornice, but having a ribbon of bare rock facing to the west.

After descending the upper southeast face, we looked across a nearly level glacier bench to the unclimbed middle peak of Bryce, hardly more than half a mile away. However, it was 5:00 P.M., and threatening storm-clouds were approaching from the south. We decided against the attempt and continued the descent, arriving at our North Rice Brook camp about 9:30.

FRED D. AYRES

Southern Selkirks. The fourth Harvard Mountaineering Club Climbing Camp was held last summer during the latter part of August in the Southern Selkirks. Nineteen members participated, and some 19 days were spent in the area. For climbing and training purposes, two base camps were established, one at Glacier Circle, the other at Mitre Creek near the

site of Howard Palmer's old Bishops' camp. From Glacier Circle, the usual climbs were made, including Fox, Hasler, Augustine, Wheeler and Kilpatrick, the last two being climbed by the same party in one day. To speed up climbs to the south and facilitate the pack over to Mitre Creek, the Deville Cliffs were well ironed and a fixed rope was rigged up. From Mitre Creek, several climbs were made in the western portion of the Purity Range, two of which, I believe, were first ascents. These were the two major peaks (*ca.* 9,800 and 10,000 feet) on either side of Purity Pass and between Mounts Kilpatrick and Purity. We have tentatively named these mountains "Pristine" and "Vestal," respectively. Both were predominantly snow climbs and presented no significant route finding problems. Mt. Purity itself was climbed directly from the north—a ridge climb, and a new route, I believe, which entailed going over a 10,000-foot subsidiary peak en route to the summit. TED SCUDDER

Northern Selkirks. August 1955 saw the Northern Selkirks under siege by a group of eight climbers, including Graham Matthews, David Michael, and Richard Irvin. The initial phase was the air drop of supplies at Tangier Summit and on the Sir Sandford Glacier, followed shortly by the ground forces who, finding their supplies at Tangier seriously damaged by enemy bears, pushed on rapidly to the primary objective: the Sir Sandford and Adamant areas. Sir Sandford yielded to no less than three different assault teams, though other elements found the southeast ridge impregnable. After bad weather defeated one attack on Big Blackfriar, Michael and Matthews, in a brilliant counter-thrust, succeeded in putting a new route on the East Face. In other skirmishes both Silvertip and the Gargoyle fell before the onslaught of the invading forces. The decisive engagement of the expedition took place on the slopes of Palisade Mountain; though well defended by goats almost to the very summit, it, too, succumbed to its first human invaders. GRAHAM MATTHEWS

Niut I, Coast Range. Victor Josendal, Harvey Manning, and Robert Sipe, all from Seattle, climbed Niut I (9,082 feet) during the second week of July 1955. We reached the summit of this unclimbed peak near Lake Tatlayoko after a day and a half backpack and a long snow and rock climb. In the second half of our week's scouting trip we drove our car over the still unfinished MacKenzie Highway across the Coast Range, down into the beautiful Bella Coola valley to the fishing village of Bella Coola. Ours was the first passenger car from outside British Columbia to drive over this road, which surely many climbers will use in the future to

reach the snow-clad peaks of the Bella Coola Range, which rise majestically 8,000 feet above the valley floor. It is expected that the highway will be in fair condition for travel in 1956. VICTOR JOSENDAL

Homathko, Essex, and Queen Bess, Coast Range. This fine area at the northern tip of the Homathko Snowfield had attracted us since we read the late Don Munday's *Canadian Alpine Journal* account of his first ascent in 1942 of Mt. Queen Bess. He referred to the pointed peak of Homathko and the stately neighbor of Bess, Mt. Essex, both about 10,000 feet high. Six of us flew to Tatlayoko Lake on July 16, 1955. We were Elfida Pigou, Denys Lloyd, Donald Cowie, Derek Fabian, his wife Janet, and I, all of the Alpine Club of Canada. After landing us at the lake, the plane free-dropped our supplies near the lower edge of the Mantle Glacier. We packed in light the 12 miles to the Base Camp at the head of Stonsayako Creek. We took a whole day to cross flooded Nostetuko (or Mathew) Creek and two more for the sidehill bushwhack.

After a reconnaissance we climbed Homathko Peak on July 21. The route was the obvious one: behind the east ridge, up a snow gully to a rotten rib which led to the summit ridge. The rock was rotten and often steep. We crossed many steep gullies with soft snow over ice to reach the peak in 11½ hours. The next day we moved to a camp above steep slabs at 6,500 feet on the north side of the Stonsayako. From it on July 23 we climbed Essex via the south ridge in 12 hours. The going was easy, over four minor summits to a final very steep 600 feet of snow. We made the second ascent of Mt. Queen Bess on July 24. The route followed the edge of the Mantle Glacier in an anticlockwise circle to the foot of the previously unclimbed northwest ridge. The rock was good, and we followed the ridge all the way, reaching the summit snow ridge in about eight hours, where we joined the Munday route. It took another hour to the summit.

PATRICK SHERMAN, *Alpine Club of Canada*

ALASKA

Climbing Along the Richardson Highway. Thirty-one members of the Iowa Mountaineers drove in August 1955, to the Castner Glacier area, one of the most accessible in Alaska. The group reached Castner Creek about 45 miles from Big Delta on August 22. Shortly after our arrival it started to rain, and it continued to rain or snow for seven days with hardly a let-up. The previously arranged air support was impossible in such weather, and on August 23 and 24 large parties carried food and supplies nine miles up the Castner Glacier where we camped the second night. Driving snow drove us back to the Castner Creek camp late the next day, and on August 26 we evacuated this camp leaving 300 pounds of food safely wrapped in plastic bags and housed in tin boxes on the glacier. We pitched a temporary camp at the Army Arctic Indoctrination Camp at Black Rapids (2,314 feet), where we were permitted to dry out our duffel. In the rain on August 27 a party of eight climbed Gunnysack Peak (*ca.* 5,500 feet) a half mile east of camp. The next day Hans Gsellman, Hans and Hubey Schlapschi ascended a major snow peak of about 7,800 feet northwest of the Black Rapids Glacier and on its right bank, apparently a first ascent. After crossing the army suspension bridge over the Delta River and ascending the glacier about five miles, they turned sharply to the right and followed the narrow snow ridge to the summit. The ascent took nine hours. On August 29 a party led by Joe Stettner and John Ebert drove down the Richardson Highway to Isabel Pass and hiked up the Gulkana Glacier to near its head. Because the army road leading to the snout of the glacier was under water, the unanticipated long hike to the base prevented our trying any of the fine peaks in this area. On August 30 a party under Joe Stettner's direction drove south to Phelan Creek just south of Rainbow Mountain. From Phelan Canyon, two miles east of the road, they ascended the peak to the right via the long narrow ridge. They traversed four false summit humps before reaching the highest point. No record of previous ascents was found. A cairn and mountain register were placed on the summit (*ca.* 5,600 feet). On the same day a party of 11 led by John Ebert and Hans Gsellman traversed a major peak to the left (southeast) of the Black Rapids Glacier. Seven miles above the Delta River crossing we turned sharply from the glacier to the east and ascended over moraines and up a canyon about a mile to a snow col. The route then led up a steep snow slope on the right to the main snow ridge and the summit, a mile away. There was no sign of previous ascents. We left a rock cairn and a metal register on the summit, which, according to

available maps, appears to be about 8,000 feet. We called it "James Peak" in honor of the youngest expedition member, seven-year-old James Ebert. We descended the west snow ridge about a thousand feet and then glissaded down a series of snow slopes to a narrow canyon which we followed to the right to the Black Rapids Glacier. We arrived at the Delta River at about 9:00 P.M. in a heavy downpour. This ended our climbing.

JOHN EBERT

University Peak, St. Elias Range. A first ascent of this 15,030 foot peak (at the time the highest unclimbed peak in North America) was completed June 19 and 20, 1955 by Keith Hart, Leon Blumer, Sheldon Brooks, Tim Kelley, Norman Sanders, and Gibson Reynolds. The party was flown into the foot of Hawkins Glacier on June 9, 20 miles from the peak. Ten days, seven camps, and one air drop at Camp 6 enabled the climbers to reach the summit via the north ridge. A 13,500-foot peak ("Mt. McCall") between Mt. Bona and University Peak was also climbed by Kelley, Brooks, and Sanders. Mt. Bona was also ascended by a new route from the south on June 24. This was a third ascent.

R. HOUSTON

PERU

Cordillera Blanca. A group from the Munich section of the Deutscher Alpenverein climbed in the summer of 1955 in the Cordillera Blanca de Huayhuash, the same region where American Alpine Club members operated a year before. They had a remarkable record with six climbs higher than 19,500 feet, three of them first ascents and nine climbs higher than 16,500 feet, five of these firsts.

From a base camp on Lake Parron at 13,700 feet they established a high camp at 18,200 feet on the Caras Glacier moraine. On June 14 Hermann Huber, Alfred Koch, and Helmut Schmidt climbed the 19,767-foot Nevado Caras de Parron. The icy southern summit slope was 60 degrees, and the peak so sharp that only one climber could stand on the top at a time. The next day Koch and Huber climbed the east ridge of the neighboring Nevado de Caras de Santa Cruz (19,751 feet), but they had to bivouac within a few feet of the summit. They descended the 60-degree south slope. An attempt on Pyramid was prevented by bad weather. Next they attacked the rugged granite spire, the Nevado Agujas (18,208 feet). This climb failed some 850 feet from the summit on the afternoon of June 26 because of climbing difficulties. They turned to the nearby Cerro de Parron, whose 17,464-foot summit they reached at 5:30 P.M. On July 15 Schmidt and Koch made the first ascent of the 20,210-foot South Peak of Huandoy

above the Quebrada Yanganuco from a bivouac on the 19,200-foot saddle. Huber, with a Peruvian porter, meanwhile made the ascent of the 20,853-foot West Peak, which had been ascended a year before for the first time by our members Ortenburger, Irvin, and Matthews, and of the 20,981-foot main (North) peak, a third ascent. On July 19 Koch and Huber made the fourth ascent of the Nevado Pisco (18,875 feet), and on August 2 Huber, Schmidt and the Peruvian porter Pedro Méndez, reached the 22,205-foot summit of Huascaran, Peru's highest peak, just a day before Hoppenon, Walton and Sowles' ascent.

In August they climbed the 16,400-foot main summit of the Chaccha group in the Cordillera Negra, reconnoitered the northern slopes of Chacraraju, and climbed 16,700-foot Pucaraju, two 16,500-foot peaks of the Pyramid group and across the Rio Morañon, Acrotamba (15,750 feet). In September they reconnoitered the as yet unexplored Cordillera Raura, where they climbed the 10,000-foot north peak of Yarupa and 18,000-foot Pucaroura.

Sierra Vilcabamba. On July 21 the Germans, Dolf Meyer and Martl Schiessler, climbed the Nevado Chamas Chico, which is over 16,500 feet, but had to turn back the next day on the Nevado Chamas Grande (19,350 feet). Meyer alone later climbed Coropuna.

Cordillera Blanca. A Peruvian group left Huaraz on August 3 to spend the night at Camp Ishinca at 16,400 feet. The next day they climbed high on Palcaraju (19,750 feet), but did not reach the summit. The group, which included four women, were as follows: Josá Ayllón and his wife, Alberto Morales Arnao and his sister Elena, Elsa Garrido Klinge, Elena Lumbreras, Jorge Lumbreras, Mariano Romero, and Fabian Suazo. On the same day Jorge Fernández Stoll and César Morales Arnao reached the 18,537-foot southwest summit of Lasuntay.

BOLIVIA

Cordillera Real, Huayna Potosí Group. The Chileans Sergio Alvarado and Oscar González made the second ascent of Cunatin Coto (18,280 feet) on September 5, 1955.

CHILE

Paine Group, Patagonia. Although the Patagonian peaks are low when compared to the more northerly Andes, they rise sheer from sea level into murky and stormy skies and are often fantastically rugged and massive. Their glaciers end in ice cliffs in the sea. The towering granite spires of the Paine group have seen much climbing activity in the last several years. In December 1953 an Argentine expedition of the Club Andino Bari-

loche entered the region, hoping to climb Paine Principal, whose altitude is reported at varying figures from 9,000 to 10,000 feet. They were harassed by even worse than normal weather and had only two really good days in a month. Avalanches thundered down throughout their stay. Their reconnaissances revealed no easy route. On January 4, Birger Lantschner and Heinz Kaltschmidt attempted the highest of the Cuernos (Horns) of Middle Paine, a difficult rock spire. The late hour and a storm turned them back about 300 feet from the summit (7,800 feet). On January 15 Otto Meiling and Kaltschmidt made their second attempt on Paine East, which they reported to be 9,050 feet high, and climbed it by the southeast ridge. This is the only mountain in the region which had been previously climbed, having been ascended in 1937 on the northeast ridge by the Germans Teufel and Zuck. The expedition's final attempt on Paine Principal over Paine West ended in tragedy when Heriberto Schmoll and Tonchek Pangerc were overwhelmed by an avalanche that broke off a hanging glacier above and swept the whole slope. Their bodies were not found then or in a second expedition sent out to search in April. Meiling and Augusto Vallmitjana were again in the region in November 1954, reconnoitered the western cliffs of the group on which they thought there were four possible routes and reached 7,500 feet, below the col between Paine Principal and Paine North.

An expedition of the Federación de Ski y de Andismo de Chile, under Eduardo Meyer, came to climb in the Paine Group in mid-January 1955. They attempted unsuccessfully the main peak and its 300-foot lower northern neighbor on their northern and western slopes above the Olguín Glacier, where they established three camps. Bad weather and vertical rock plastered with snow stopped them still 400 feet below the col between these peaks. They reported that mushrooms of ice would have guarded the summit slopes, had they gotten higher. On February 10 they changed their objectives to what they called Paine South (apparently the Argentines' "Paine West") and the summit that lies between this and the main summit, for which they give altitudes of 8,530 and 9,050 feet, respectively. Two days later from a 6,000-foot bivouac they climbed a couloir on the west face to a col between the peaks; on one vertical stretch of rock they used three pitons. From there they climbed first the South (or West) Peak and up the eastern ice face to the other central summit.

Central Chile. On December 8, 1954, Jorge Chaparro and Raúl Vouriot made the first ascent of 13,616-foot El Paso.

Volcano Llanin, Lake District. Two Italians, Enzio Mazzoldi and Giovanni Wiese made the first ascent of the formidable south face of the

Volcán Llanin (12,388 feet) on the Chilean-Argentine border on February 19-21, 1955. The face had been previously attempted various times. On November 17 Otto Meiling and Dinko Bertoncelj of the Club Andino Bariloche made another new route on Llanin's south face to the west of the Italian route after traversing Cerros Crespo and Cajón Negro. They claimed that their route was easier than the Italian one.

ARGENTINA

Ojos del Salado. We were startled to read in the press that on January 22, 1955, a group of the Argentinian Associación Tucumana de Andismo had made an ascent of a peak higher than Aconcagua. They claimed that the Ojos del Salado was the highest point in the Americas and some 300 feet higher than Aconcagua. Since the altitude of this peak, which lies on the Chilean-Argentinian frontier above the Laguna Verde at about 27 degrees south latitude, is given in the National Geographic Society's map of South America as 22,539 feet, and in the Encyclopedia Britannica (1944) as 22,402 feet, we were interested in receiving further information on how the climbers, Señores Jaime Femenías, Manuel Luis Cordomi, Gerardo Türpe, Wilfred Köppens, Orlando Bravo, and Rodolfo Benvenutti, had determined the altitude. In their association's "Boletín Informativo No. 16" of June 1955 they quote an official altitude of 6,690 meters (21,949 feet), but feel that the peak for which this altitude is given is not the true peak which they climbed. They state "with respect to the altitude of the mountain nothing definite can be said because the deficiencies in the instruments used do not reflect an objective measurement. The divulged altitude of 7,100 meters (23,295 feet) is simply an estimate based on the altitude of the final camp, and the hours of ascent to the summit." Although we congratulate the climbers on the ascent of a very high mountain, it seems hard yet to accept their estimate of altitude arrived at in this inexact manner. Two other later ascents have been recently reported.

[Still further confusion concerning the altitude and even the location of the peak has recently been added by an Argentine newspaper account (La Razon, Feb. 7, 1956, Buenos Aires) that not only places the altitude at 7,260 meters, but once again moves the location of the peak. This article states that the first ascent of the mountain was actually completed in November of 1951 by two men from the Club Andino de Jujuy (Guillermo Pomo and Francisco Solana Quintana). This group estimated the height as 6,870 meters. The ascent by Prof. Bravo mentioned above, moved the altitude to over 7,100 meters and the peak into Argentina (27° 10′ S, 68° 35′ W). The latest expedition in February of 1956 was composed of 25 people from Chile led by Captain René Gajardo. This group moves the peak back into Chile (20 kilometers from Copiapó) and places the altitude at 7,260 meters, 130 meters higher than Aconcagua. Both of the latter expeditions agree that Ojos del Salado is the highest volcano in the world as indicated by lava and steam vents near the summit. Needless to say much more accurate information must be received before the final location and altitude of this high peak can be settled.—R. C. H.]

Cerro Chimberí. This 18,000-foot peak at the head of the Río Cochuna in the Nevados Centrales was climbed early in 1955 by Jaime Femenías, Flora Albornoz, Perico Pérez Cherp, Gerardo Türpe, Guillermo Muntaner, Ernesto Gómez Agote, Alfredo Bolsi, and Susana Olmos.

Río Blanco Group. In January 1955 Jorge and Sergio Domicelj, Juan Guthmann, Fredy Klayman, and Carlos Stegmann of the Centro Andino, Buenos Aires, climbed in the Río Blanco Group, which lies just to the south of Aconcagua. From a base camp at 10,300 feet in the Quebrada de Vargas they established a Camp 1 at 14,000 feet and Camp 2 on the Upper Río Plomo Glacier at 16,000 feet. The Domicelj brothers and Klayman made the third ascent of 17,036-foot Cerro León Blanco, while Guthmann and Stegmann attempted 17,373-foot Cerro Río Blanco, where they failed because of bad weather. Storms drove them back to their base, from which some four days later the first three made the first ascent of a 15,708-foot peak on the Chilean-Argentine frontier about two miles north of Cerro León Blanco. This they called Cerro Gustavo. The other two meanwhile made the second ascent of the Cerro Central (17,205 feet) from Camp 1.

Portillo Group. Francois Boucher, Julio Corradi, Jochen Groos, Nestor Sanes, Carlos Urien and Paul Ulens of the Centro Andino Buenos Aires spent the week of January 20 to 28, 1955, climbing in the Portillo Group. They made first ascents of the South Face of Cerro Punta Negra (15,748 feet), of Pico del Amorcito (16,732 feet), of three peaks which they named Cerro Fiala (18,373 feet), Cerro del Oso (16,404 feet), and Cerro Pirquitas (18,044 feet) and of three lesser mountains. They also made the second ascent of all summits of the Tres Picos del Amor (18,054 feet).

Dos Picos, Cordillera del Río Tigre. Three expeditions visited this rugged region, which lies about 80 miles south of Bariloche, west of Cholila. The members of the Club Andino Esquel, who made the first ascent of the south (highest) tower of the Cerro Dos Picos (8,300 feet), Señores Eggmann, Hardt, and Porcel, said that the ascent was "serious but without very great difficulties." Señores Cazaux and Michel of the Centro Andino de Buenos Aires several weeks later climbed the northern tower, which they classified as exceptionally difficult. In March and April Dr. J. J. Neumeyer, Dr. Venzano, Birger Lantschner and M. Marqués of the Club Andino Bariloche explored this region further, during which they made the first ascent of a peak they called Cerro Orion.

ARCTIC

Spitzbergen. There was a number of expeditions active in the mountains of Spitzbergen in the summer of 1955. An Austrian group from the Edelweiss Club in Salzburg under Dr. Walter Frauenberger of Nanga Parbat fame traveled as far as Bethasnia Bay of the inner Eisfjord with a party from Cambridge University. Thence they continued to Claas Billen Bay, where they landed at Brucebyen and established a base five days up the Stubendorff Glacier. They made 40 first ascents of peaks up to 5,575 feet and did extensive topographical and glaciological work. A Munich group was active on Western Spitzbergen between the Kreuzfjord and Liefde Bay and Woodfjord. An Austrian group made four ascents, the highest Nordensköllfyell (5,250 feet) which took only 18 days from Linz to Linz and involved no air travel.

A GEOLOGIST IN THE ARCTIC

Our member, Fred H. Roots, is one of our very few professional geologists with Arctic, Antarctic, and high mountain experience. After studying at the University of British Columbia, summers' field work with the Canadian government, a member of the Norwegian-British-Swedish Antarctic Expedition, 1949-52, further study at Princeton, then at Cambridge University and work at the Scott Polar Research Institute (where he married the assistant director), he is now with the Geological Survey of Canada. The following, taken from a letter to Henry Hall written in October 1955 covers that year's field season in the Arctic:

> "Operation Franklin," as we called this year's effort in the Arctic Islands, was great fun and, I think, a worthwhile project all round. I'm not sure whether I outlined our plans to you last spring or not. What we tried to do was to make a big loop through the northern and western islands of the Arctic archipelago (the Queen Elizabeth Islands), using a combination of ski aircraft, dog teams, helicopters, and of course quite a bit of hobnails and snowshoes. Things turned out pretty well according to plan. The first of us went to Resolute Bay, Cornwallis Island, in April and after digging out the stores shipped there last year we spent May and June establishing the main camps and fuel caches, using a ski-DC-3 and dog teams. There were three main bases, in addition to the headquarters at Resolute Bay, and they were to be occupied in turn: one on the southwest corner of Ellesmere Island, one on Ellef Rignes, one on eastern Melville Island. In addition there were main fuel dumps on Devon, Cornwall, Axel Heiberg,

Loughead, and Bathurst Islands; and smaller dumps were established at many other places as the season progressed. During this time, dog-sledging trips were made on Ellesmere, Ellef Ringnes, Melville, and Somerset Islands, to determine the basic geological stratigraphy; the last dog parties did not return until the end of June (when we brought them back, dogs and all, in a helicopter). The helicopters, two Sikorsky S-55's, arrived in early June and immediately set about distributing parties at places we had already picked from air photos. We had nine field teams, each of two men; what with the helicopter crew, radio men and cooks, there were 30 in the gang altogether.

Most of the work settled down to foot traversing, with camp moves made by helicopter; but in the more mountainous areas of folded rocks we found ourselves packing the camps as usual. But the helicopters made even backpacking luxurious by Coast Range standards. We would fly over the route first, selecting the route in detail, and picking out camp-sites, where we would leave a cache of food. Then it was just a matter of walking or climbing from cache to cache, and rock and fossil specimens collected could be left behind in caches. At the other side you would wait for the helicopter, and then fly back, checking the geology of any doubtful areas, pick up the specimens—it really was a delightful way to get around. The S-55's always carried lots of food and camping gear, so when the weather closed in, as it did on nearly every long flight, it was just a case of sitting down and waiting it out in comfort.

The Arctic summer is always poor for flying, with persistent fog and low cloud, and this summer was a little worse than average in most parts. So we spent more than a third of the time "grounded" because of poor visibility. But the work was not hampered unduly, and the circuit of the islands was completed, except that we did less on Melville Island than we had hoped.

From the geological and topographic standpoint, one of the most interesting features of the summer was the investigation of the mountain system that runs across the islands, from Melville across Bathurst, up through Axel Heiberg and Ellesmere and across the north end of Greenland. This has been officially named the Innutian System, and certainly ranks with the Appalachians and the Cordillera as one of the three great mountain systems of North America. From a mountain-lover's standpoint the most attractive island in this system is Axel Heiberg. Here the peaks rise to about 7,500 feet, directly from narrow fiords that reach deep into the island. The mountains are higher in parts of Ellesmere, but they are big and blocky, and large parts of the "high

country" there are rather plain icecaps; but Axel Heiberg is a nice balance of sharp peaks, twisting valley glaciers and ferocious little icefalls, while down below are relatively green meadows and quite a high population of muskox and caribou. And the rocks are interesting—fantastically exposed folds and twists of strata, whole mountains of brilliant white gypsum, banded yellow and black sediments, red lava flows and any amount of good hard black coal, so that you can enjoy a campfire 1,500 miles north of the treeline. Axel Heiberg and that part of Ellesmere just east of it have the most good summer weather of any spot known in the Arctic Islands—day after day of blue skies while the rest of the archipelago was smothered in clouds. It is no ordinary island—a great place for a holiday.

HENRY S. HALL, JR.

EUROPE

Monte Rosa, Alps. In the 1955 *American Alpine Journal* (pages 126 to 132) I have read the article by Guy M. Everett, "A Fight for Life on Monte Rosa." As he says, he was bound for the "Cresta Rey" of the Dufourspitze. He had "read the scanty details given in the guide book and looked at the drawings." Although not specified, I suppose it concerns my *Guide Book*. The "Cresta Rey" (route 198) is a simple rock rib, straight forward and without gendarme. Its description does not imply any details. You simply follow to the top of the Dufour. Mr. Everett's story is quite clear to me: he tried the so-called "Cresta Piacenza" (route 195) which is far longer and much more difficult than the "Cresta Rey" because of its many gendarmes. These two ridges (at their foot) are about one kilometer apart from one another and it sounds rather curious that Mr. Everett could confuse them.

As you can see in the Addenda to my Guide, page 275, this route 195 was followed for the first time on July 20, 1907, by Mario Piacenza and the guides Jean-Joseph Carrel and J. B. Pellissier, but Piacenza never published anything about this fine climb. The only testimonial is contained in Carrel's guide book where Piacenza writes that they took 23 hours from Bétemps to the top. Knowing the strength of this party you can imagine that this route is not easy. This testimonial was published in 1952 (in my *Guide Book*) after almost half a century. I suggested to call this bridge "Cresta Piacenza" in remembrance of the famous Italian climber and explorer. Piacenza is still alive and does well deserve this honour.

MARCEL KURZ

NEPAL

Makalu. The French expedition to Makalu led by Jean Franco deserves high praise. Thanks to excellent organization, splendid equipment, especially in their oxygen apparatus, perfect and nearly windless weather and a strong team of climbers, they managed to get every one of the Frenchmen and one Sherpa to the 27,790-foot, fifth highest summit of the world. After having been severely buffeted by cold and stormy weather in the post-monsoon season of 1954, when they climbed Makalu II (25,460 feet) and Chomo Lonzo (25,581 feet), they returned in the spring of 1955 to lay siege to the mountain. They brought 11 tons of supplies to the base camp and over 1,500 pounds to their 24,442-foot Camp 5. The climbers spent a month between 16,000 and 20,000 feet acclimatizing. They were lucky with the weather, for they state that with poorer snow conditions, there would have been avalanche danger. The final assault took place after Camp 5 was established in the Makalu Col on May 9. The rock spur between Camps 4 and 5 necessitated 1,350 feet of fixed rope. From Camp 5 the route lay comparatively flat across the north slope and then up a wide couloir, luckily covered with excellent firm snow. After passing through a few threatening séracs they placed Camp 6 at 25,600 feet. On May 15 Lionel Terray and Jean Couzy, the first summit party, climbed the first 1,000 feet above this high camp up the right side of a snow terrace on wind-etched snow in an hour! There they rejected the corniced ridge on the right in favor of a steep rock climb onto the northwest ridge on the left of the cirque at the head of the terrace. Once on the summit ridge it was not difficult climbing, though the actual top was a gloriously small one-man snow spire. The next day Jean Franco, Guido Magnone and the sirdar Gyalzen, followed in their steps, and on the day after, May 17, the remaining Frenchmen, Jean Bouvier, Pierre Leroux, Serge Coupé and André Vialatte climbed to the summit.

Langtang Himal. The famous Swiss climber, Raymond Lambert, and the noted Belgian scientist, Canon Jules Détry, in early April 1955 made a nine-day march from Kathmandu to the Langtang Gompa monastery where at about 13,000 feet on the Nepalese-Tibetan frontier they established their base camp. While Détry carried on his ethnological research, Lambert turned with his Sherpas to the Langtang Himal. Although plagued by bad weather, they established Camp 2 at 17,400 feet and Camp 3 at 18,900 below some large snow blocks. Notwithstanding the protection of these, in the early morning of May 14 an avalanche which fell across the area but which was parted by the blocks, left the whole camp under

a considerable covering of snow. Lambert and the Sherpas Angorbu, Kamitsering, Pasang, and Pemba Gyaltzen set off immediately for the summit of a 22,000-foot peak which the Swiss called the "White Dome." The ascent was made difficult by crevasses, but they were rewarded on top by a magnificent view of Everest, Makalu, Lhotse and Gaurisankar. They reported that they did not attempt the highest point of the Langtang Himal, 23,400-foot Lirung, which seems impossible from the Nepalese side. There may be a route on the Tibetan side.

Jugal Himal. The first all-woman Himalayan expedition consisting of three members of the Ladies' Scottish Climbing Club led by Mrs. Monica Jackson, spent six weeks in April and May 1955 in the Jugal Himal on the Nepalese-Tibetan frontier northeast of Kathmandu. They explored the three main glaciers of the Jugal Himal, climbed three passes and climbed an unnamed 22,000-foot peak.

Gaurisankar Region. The Merseyside Himalayan Expedition under the leadership of Alfred Gregory spent two and a half months climbing and exploring in the little-known region between Guarisankar and Cho Oyu. They first climbed two peaks south of the Rowaling and in April went up the Tolam Ban Glacier to survey and there climbed eight more mountains. Later they climbed in the Menlung Valley. In all they ascended 19 peaks between 17,000 and 21,000 feet and mapped the region.

Dhaulagiri. The fourth attempt to climb 26,795-foot Dhaulagiri ended in failure again this year when a party of five Germans and four Swiss under the leadership of Martin Meier of Munich were thwarted by bad weather and heavy snow. They are said to have established five camps along the Swiss-Argentine route, but details are lacking. Reports of the highest point reached conflict and vary from 23,625 feet to nearly 26,000 feet. The expedition food was of an unusual kind—entirely vegetarian.

Himal Chuli. The ill-fated expedition of Britishers from Kenya under the joint leadership of J. W. Howard and Arthur Firmin to Himal Chuli, a 25,800-foot peak in the vicinity of Manaslu, was so beset by misfortunes that it had to abandon the climb before it had really seriously started. It is said to have had bad weather and difficulties with porters. Then in a reconnaissance above the 16,000-foot base camp, Arthur Firmin fell into a crevasse and broke his femur. Although he was immediately evacuated and was being transported to the Pokhara British Mission Hospital under the care of two nurses, he died before arriving there.

Annapurna IV. A German expedition under the leadership of Heinz Steinmetz, consisting of Dr. Manfred Bachmann, Harald Biller, Fritz Lobbichler and Jürgen Wellenkamp, successfully ascended 24,688-foot

Annapurna IV, which was climbed in 1950 by H. W. Tilman's party to 24,000 feet and in 1952 by the Japanese to 19,000 feet. The Germans followed the same route as Tilman to the base of the mountain. On May 14, 1955, the actual attack on the peak started. Biller, Steinmetz and Wellenkamp found the going very difficult, but climbed to the summit on May 30 from Camp 4. Before the advent of the monsoon on July 2, Lobbichler, Steinmetz and Wellenkamp climbed 23,000-foot Kang Guru. The climbers climbed several 17,000- to 20,000-foot peaks in the doubtful weather at the beginning of the monsoon period before withdrawing from the Manangbhot area north to Mustangbhot. There in the Damodar Himal they reached the summits of Dam Kang (20,000 feet) on August 25, Julo Kang (21,000 feet) on August 29, and Kang Churi (19,000 feet) on August 31. On October 17 Steinmetz and Wellenkamp climbed 20,300-foot Lamjung, a very difficult peak. In all they ascended 11 mountains.

Ganesh Himal. Under the leadership of the Swiss Raymond Lambert, a Franco-Swiss expedition succeeded in climbing 24,298-foot Ganesh Himal on October 24, 1955. The climbers, Swiss Eric Gauchat, Claude Morel, and Pierre Vittoz, and French Mme. Claude Kogan, Paul Gendre, and Robert Guinot reached base camp on a meadow on the right bank of the Chilim Glacier on September 20. Two days later they climbed a 16,568-foot peak above them which they called the "Pointe de Sandjet" and which involved Class 5 climbing. The next day they started their reconnaissance of the main peak. Lambert and Mme. Kogan looked at the approaches to the south col, while Vittoz and three others explored the south face. It was that night that Vittoz was attacked by a high fever. Finally on October 6 Lambert left the Base Camp to evacuate the still dangerously ill missionary to Kathmandu, from whence he returned to the mountain 10 days later. Lambert, Gauchat, Mme. Kogan, and Gendre made the summit climb. Gauchat was killed in a fall during the return from the peak.

Manaslu. Our reconnaissance party to Manaslu of three members under the leadership of Ohara has returned from Nepal, reporting the successful settlement of the trouble which caused the 1954 party to give up the climb of Manaslu when the Sama villagers obstructed their passage at the foot of the mountain. The party established a camp in November 1955 at the Naike Col (18,400 feet) from which they reconnoitered the route to the summit through the plateau. They ascertained that the route of 1953 will most probably remain unchanged, although a somewhat remarkable change in the condition of the ice was observed.

Y. MITA, *Japanese Alpine Club*

INDIA

Kamet and Abi Gamin. An all-Indian expedition made a remarkable record in Garhwal in 1955, accomplishing the second ascent of Kamet (25,447 feet) and the third ascent of Abi Gamin (24,130 feet). The party under the direction of Major Narendra D. Jayal, who is the principal of the Himalayan Mountaineering Institute, Darjeeling, was made up of 10 climbers and five Sherpa Instructors. After an unsuccessful try on June 28, Jayal, Ang Tharkay, Da Namgyal, Ang Temba, and Hlakpa Dorje made the summit from Camp 5 (23,400 feet) near Meade's Col on July 6. The route differed from that used on Frank S. Smythe's first ascent up the northeast face; this year the climbers followed the ridge that links Abi Gamin with Kamet. On the same day a party under Gurdial Singh climbed Abi Gamin, using Jayal's 1953 route. The Anglo-Swiss first ascent of 1950 was from the Tibetan side.

Banderpunch, Black Peak. J. M. Gibson again led an expedition in 1955 into the Banderpunch Group in Tehri Garhwal, where he has climbed and explored so often. In 1950 he was with the party that climbed the 20,720-foot White Peak (Banderpunch II). In 1952 and 1953 he approached the group from the northwest and in the second year climbed to 100 feet below the summit of the Black Peak (20,956 feet), the highest peak in the range, before being turned back by storm. What makes Gibson's recent expeditions remarkable is that all his climbing companions are school boys from the Doon School, Debra Dun, or from Mayo College, Ajmer. Last summer they again approached the mountains past Oshla on the Tons River. Base camp was below the Banderpunch Glacier, which descends westward past the Banderpunch Peaks on the south and 20,545-foot Sugnalin on the north. Immediately Jagjit, fresh from the Himalayan Mountaineering Institute and restricted in time, attacked the Black Peak with Sherpas Passang and Cheten. On May 29 while the other boys acclimatized themselves skiing, they made a summit try but failed in deep snow 400 feet from the top. On June 7 Gibson and the two Sherpas left Camp 3 at 19,000 feet and made the first ascent of the mountain. Unfortunately, none of the boys was yet fit to accompany them from the high camp. In deteriorating weather and in cold powder snow covered with breakable wind crust, the three reached the summit after a three and a half hour climb. On June 11 two boys, identified by Gibson only as Chicky and Winston, with Sherpa Cheten climbed the 18,020-foot peak south of the point where the Banderpunch Glacier turns westward. The next day

Gibson, with a boy whom Gibson calls Don, climbed the 18,000-foot peak north of the pass to Harsil on the Sugnalin ridge above the Banderpunch.

Ronti. Mr. Peter Aufschnaiter and I reached the summit of Ronti (19,895 feet) on June 15, 1955. [This was the first ascent. Editor.] Setting out from Nanda Prayag, we ascended the Nanda Kini valley, crossed the Humkum Gala (17,000 feet) and next ascended a pass separating Ronti from Nanda Ghunti. Just short of the summit of this pass we set up camp on the exposed rock of a moraine opposite a prominent snow couloir which showed avalanche tracks in the rocky south face of the ridge connecting Ronti with Point 19,345 feet to the east. The following day we ascended this couloir to a point about a third of the way to the top, where we turned to the left in a snow gully hidden from the pass below by a rocky buttress. We followed this gully and subsequent ledges up to a snow slope leading to the crest of the above-mentioned ridge, on which we remained for a brief distance. The climb up the snowy west slopes of the summit peak of Ronti was somewhat complicated by a number of small hidden crevasses. We followed a slight hump of wind-blown snow dividing the eastern from the southeastern snow slopes on this part of the route. The climb started at 6:00 A.M. The summit was reached at 1:03 P.M. and the return to camp was made at 5:15.

GEORGE HAMPSON, *Himalayan Club*

Central Lahul. Under the leadership of Hamish McArthur, a small expedition consisting of Mrs. McArthur, Mr. and Mrs. Frank Solari, and Captain and Mrs. K. Goswami, entered Spiti on July 23, 1955. From a camp near Shitakar they made a plane table survey of the Lahul peaks and climbed an 18,000-foot peak on the Lahul-Spiti watershed southeast of the Kanzam La. They returned by the Balamo La to the Chandra valley. Up a tributary valley of the Chandra they established an advance base camp. They climbed a 19,000-foot peak north of the glacier in this valley. Their final ascent was Peak 20,430 shown on Map 52 H.

Kulti Glacier Basin. The R.A.F. Mountaineering Expedition to Kulu and Spiti led by Group Captain A. J. M. Smyth attempted in late May to reach the Bara Shigri Glacier, but heavy snows on the Rohtang Pass kept them from their objective. They crossed the Hamta Pass to the unexplored Kulti Glacier basin where they climbed all eight of the main peaks of the region, which range up to 21,000 feet, including 20,340-foot Shikar Beh.

Spiti. The Cambridge University Expedition to Spiti comprised Mr. and Mrs. P. F. Holmes, Mr. and Mrs. H. A. Lamb, Dr. R. W. Hey, geologist,

and me. We left Manali on August 10, 1955, and crossed the Rohtang Pass (13,050 feet) to the Chandra valley and then the Kanzam pass (14,932 feet) and entered Spiti. On August 22 from a 14,000-foot camp below the Kanzam pass, we climbed a peak of about 18,500 feet which provided an excellent view of the mountains of the main Kulu-Spiti divide. A base camp was established on August 27 near Kangring village in the main Spiti valley by the Ratang gorge. Holmes and I with three Ladakhi porters managed in four days of difficult going to reach the headwaters of the Ratang gorge, about 16 miles from Base. From a camp up a subsidiary glacier at 17,800 feet we climbed, on September 5, a peak of 20,050 feet, which provided superb views of the unknown country north of the main watershed. We hope shortly to produce a sketch map showing the main peaks and glaciers of this area, which is now left a blank on the existing map, and also a possible pass leading to the country to the South. Thereafter, we entered Shilla Nalla and on September 10 climbed Peak 20,680 overlooking Shilla. Our observations revealed that Shilla Peak, situated at the head of the Shilla Nalla, attains a height of no more than 20,000 feet.[1] We returned to Manali by the 14,027-foot Hampta pass. Leaving Manali on September 23, three members of the party traveled up the Jagatsukh valley to attempt Indrasan (20,410 feet) near Deo Tibba. A severe three-day storm ruled out these plans before a base could be established. The geologist did some interesting work in the area of the Spiti shales, around Kibar, Rangring and Kaze, returning with a collection of valuable specimens. T. H. BRAHAM, *Himalayan Club*

PAKISTAN

Chogo-Lungma Region. A strong German expedition from Frankfurt explored and climbed in the Chogo-Lungma region in the western Karakoram. They also did considerable scientific work in glaciology, physics, geography, and geology under Dr. Walter Brendel, Dr. Norbert Untersteiner, and Dr. Harold Uhlig. On July 6 Reinhard Diepen, Edward Reinhard, and Joachim Tietze, climbed 23,156-foot Pyramid Peak from Camp 4 at 21,800 feet. In late July the expedition leader, Reinhard Sander, had to return because of a knee injury sustained in a fall into a crevasse. The party established an 18,700-foot high camp on Malubiting, the highest

[1]The altitude of this peak has long been given as 23,050 feet. As such it held the altitude record for about 20 years after its ascent in 1860 by a nameless khalasi of the Survey of India, who carried a survey marker to the summit. The accuracy of its altitude was also questioned by Dr. J. de V. Graaff and Kenneth E. Snelson on their 1952 Deo Tibba-Rubal Kang expedition.—H. A. C.

peak in the region on the col, called "Snow Col" by the Workman's. On July 26 Karl Kramer reached 20,000 feet, but was turned back by bad weather. An avalanche which buried three porters, who were rescued, made them give up a later attempt. Another party unsuccessfully reconnoitered Makrong (22,638 feet).

Chari Khand. Nasir Ali and I with two Hunza porters made a short attempt on Chari Khand (19,300 feet) from the Naltar valley north of Gilgit in November 1955. The only route appearing feasible was to try to gain the upper reaches of the glacier on its south side after ascending a spur just above the Naltar. From a dry camp at about 14,500 feet on the spur we climbed a couple of thousand feet higher to a good spot for a last camp; but as the bare rock had now become too steep for loaded men or for a safe descent in case of new snow, we decided to give it up. Pressure of my Navy orders would not allow time for another attempt.

DAVID COLLINS

JAPAN

Sakube Iwa, Honshu. Honshu, the southwestern island of Japan, offers little climbing of an original nature unless one can locate some of the small forgotten pinnacles projecting from timber covered slopes. Sakube Iwa is such a pinnacle in Ryu Mon north of Arita. Previous ascents had been made on the north side by Japanese climbers who shinnied up long bamboo poles to get up the overhang. In September 1954 Hirota Yoshinaga and I climbed the east side, the only face without pronounced overhang, using a few pitons for safety. This ascent was very similar to those in Pinnacles National Monument and was on the same type of conglomerate.

DAVID COLLINS

U. S. S. R.

Pamirs. A Soviet-Chinese expedition was active in the Trans-Alai Group in the western Pamirs. Nineteen members of the expedition made, on August 14, 1955, the first ascent of a 22,227-foot neighbor of Peak Lenin, which they named Peak of Unity "as a sign of the indissoluble friendship between the U. S. S. R. and the Chinese People's Republic." On August 15 they climbed the main summit of the Sulumart range, Peak Oktjabskri (22,251 feet), which had alternately difficult rock and ice.

Club Activities

EDITED BY FREDERICK O. JOHNSON

A.A.C., Rocky Mountain Section. The financial affairs of the Rocky Mountain Section of the A.A.C. took a disastrous turn at the start of the year through a deficit incurred in connection with a lecture by Heinrich Harrer, excellent in itself, but involving too large a financial commitment for our little group and timed on a bad evening for good attendance. Let this be a lesson to other ambitious sections. This deficit was willingly underwritten by contributions of Section members so that the good name of the Club has not been smirched.

Stephen H. Hart succeeded Gerry Cunningham as Section Chairman at a business meeting in March, when we enjoyed an illustrated talk by Mel Griffiths on Greenland. We had a very pleasant evening with Dr. Charles Houston in May, at which time he showed slides and talked about the American K2 Expedition.

In January 1956 a nice profit on an excellent lecture by Capt. Tony Streather on the Kangchenjunga ascent repaired part of our financial damage and permitted us to repay a portion of the contributions by our members. We are grateful to the Appalachian Mountain Club for generously assisting with the expenses of this lecture.

STEPHEN H. HART, *Chairman*

A.A.C., Sierra Nevada Section. During 1955 the Sierra Nevada Section held four meetings, all of them in Berkeley. Talks were given in March by Nick Clinch and Bob Brooke on the 1954 Coast Range Expedition near Mt. Waddington; in May by Nello Pace on the Symposium on the Problems of Mountain Altitudes, which was held in April at the University of California; in October by Dick Irvin on his numerous 1955 climbs in the Canadian Rockies; and in December by Jack Graham on the 14,000-foot peaks of the Alps. Section officers chosen at the March meeting for the 1955-1956 term include Richard Houston, Chairman; Kenneth Adam, Vice-chairman; and Frederick Johnson, Secretary-Treasurer. During the summer members were particularly active in the Canadian Rockies, the Tetons, and the Corderilla Blanca of Peru. Membership in the section now stands at 64, with an average attendance at meetings of about 20. David Brower has been elected Western Vice-President of the Club for the 1956-1957 term.

The Alpine Club of Canada. The Club conducted two very successful camps during the period under review—an eight-day ski camp during the Easter vacation and the usual summer camp—the 50th such camp to be held by the Club in the Canadian mountains. The ski camp was held at Glacier, British Columbia, based at the Club's cabin in Rogers Pass, erected in honor of the late founder of the A.C.C., Mr. Arthur O. Wheeler. Just over 30 members and friends attended, and although the weather was generally not very good a number of extended trips were undertaken, notably to the Asulkan Pass and over the Illecillewaet Névé. Our good friend Ira Spring attended with a large assortment of photographic equipment and obtained some very fine shots of the wintry scenery, both inanimate and animate.

The summer camp was held from July 25 to August 7 at Mt. Robson, where the Club had not conducted a camp since 1924. We moved in just at the end of a three-week spell of fine weather, but, too good to last, the weather broke badly on the very day the camp opened. Although we had established a high camp at 8,800 feet, above Kinney Lake, on the standard South face route, we were unable to get any Club parties to the top due to fresh snow conditions. The mountain did not again become safe to climb until several days after the camp ended. In spite of the bad weather, however, a great deal of climbing was accomplished, and Club parties ascended Mt. Resplendent (11,240 feet), Mt. Phillips (10,660 feet), Lynx Mountain (10,471 feet), and many others. Dr. Frank Gaebelein conducted divine service on Sunday with an inspiring address. An unusual feature was the visit from a helicopter which brought in Harry Rowed, the well-known Jasper photographer, in a mere 11 minutes from the Hargreaves' ranch near the Canadian National Railway. The same trip partly by car and partly on foot took about eight hours.

Many Club members took part in private expeditions, and the Calgary, Edmonton, Vancouver, and Victoria Sections were especially active.

A number of first ascents was made in the Coast Range of British Columbia, and some further exploration of the Howson Range in north central British Columbia was undertaken by a party of four led by the writer.

Training programs were carried out at summer camp, where snow, ice, and rock-climbing schools were conducted. Special emphasis was laid on safety in climbing, good route finding, and rescue techniques.

At the end of November the Vancouver Section entertained Sir Edmund Hillary who was passing through their city en route to the Antarctic where he is joining the Expedition which is to cross the Antarctic Conti-

nent in connection with the forthcoming geophysical year. One of our local members, Paddy Sherman, was able to persuade Pacific Western Airlines to fly Sir Edmund over the Coast Range, which he was especially keen to see. The flight was done in a de Havilland Beaver Float plane, and Mrs. Phyl Munday, one of the pioneers of the Coast Range, was along. They had fine views of the whole Waddington group, and the climax of the trip was when the pilot actually flew the plane between Waddington's two peaks at about the 13,000-foot level.

The safety record in the Rockies was marred again last summer by a most deplorable tragedy on Mt. Temple (11,636 feet), in which seven American schoolboys aged from 13-16 years lost their lives. They were attempting this long climb too early in the season. They were also inadequately clothed, poorly equipped, and had no adult leadership on the upper part of the climb where the accident happened. They were also not on the correct route, which though long, is quite easy—a long walk up scree slopes on which a rope is really not necessary. They had also omitted to obtain the usual permit from the local Park warden. After being caught in a snowslide at about the 9,500-foot level, in which two boys were actually buried and in which some of the others suffered fractures, they were unable to stand the exposure. No fewer than five of the victims died of exposure and shock before help could reach them. Their condition was also aggravated by an adverse change in the weather after the accident. The need for education of the climbing public in safe methods of mountaineering is once again emphasized. E. R. GIBSON, *President*

Appalachian Mountain Club. The Club carried out its usual activities during 1955: its 363 miles of trails in the White Mountains, on Monadnock and Katahdin were cleared and new bridges built; its nine huts were open during the tramping season for climbers; its ski lodge did an improved business throughout the year; and its various summer camps operated at capacity. The peripatetic August Camp was held in the heart of the Adirondacks, giving members a chance to visit this region and climb from a well-centered camp. A large number of trips, from one day to a week or more, were run to various mountain destinations in New England. A two-week cruise was run on the Great Lakes for those desiring a change from the mountains. The canoeists, in addition to their local white-water trips, ran a two-week trip on the Gatineau River in Quebec and a one-month trip covering the canyons of the Yampa, Green and Salmon Rivers in Colorado, Utah, and Idaho. A two-week climbing trip in the Austrian Alps allowed members a chance to try out their legs in this

always charming region. Rock-climbing activities were carried on throughout the climbing season, and winter climbing, particularly ice climbing, was stressed. Individual members were active in the Alps, Himalaya, Andes, Alaska, and the western ranges, including the Wind River and Tetons, while two members climbed the Devil's Tower.

K. A. HENDERSON

Chicago Mountaineering Club. Harry Lumby of our club, who is an accredited first-aid instructor, held classes in the early spring of 1955 for a small group of C.M.C. Mountaineers, teaching them the wonders of bruises, bandages, and broken bones. This type of knowledge is very valuable to mountaineers who might be in a wilderness area sans medical aid. The class completed the regular and standard courses.

The first aiders eagerly attended the Chicago Mountaineering Club western outing in the northern Wind River Mountains of Wyoming. Our safety record was perfect, we are happy to say. The club, with Hans Heuer as Outing Chairman, hiked into the Gannett-Dinwoody area from Burris, Wyoming, along toward the end of July. Forty-two people made the 15-mile trip into the area over Horse Ridge. About 10 members traveled in a week early, and set up bridges and marked the trail. A new trail has been blazed from the top of Horse Ridge, bypassing the Ink Wells and thereby eliminating several miles from the hike in.

The advance party had to clear the area for camping since Camp was established at the site of the former Floyd Wilson camp, which was left in a very undesirable state. Don Presgrove now does the packing in from Burris. The weather was beautiful at that time, and much climbing was accomplished, *i.e.,* Gannett, Turret, Wilson, Sphinx, Bastion, Pinnacle Ridge, etc. A report was compiled and copies are available through the C.M.C.

With the greater influx of guests and new members this past year, it was deemed necessary to tighten regulations on rock climbing on local week-end outings. A special committee was formed to appoint official rope leaders and in this way strengthen the club's safety standards.

B. HEUER

Colorado Mountain Club. Two outings were held with 68 persons attending the in-state Shavano outing and 35 the outing at Lake O'Hara, which was illustrated for club groups at Denver, Fort Collins, and Colorado Springs. Another popular program was the movie of the Italian ascent of K2, shown at Denver.

Harold Walton, Harvey Platts, and David Gagliardo were part of a group which made three first ascents in the Pucahirca group of Peru. Walton also climbed Huascarán, Peru's highest mountain.

Seventy people took part in a Technical Climbing School which featured four lectures and five trips. Climbing trips were made to Shiprock (six people reached the top), Bishop Rock, Devil's Tower, and peaks in Mexico. In the 1955 season there were six qualified ski trips, each of which averaged five to 12 persons. Fred Welch taught a first-aid course for club members; it was a standard 18-hour course and is required for class 4 climbers.

Members of the C.M.C. along with the University of Wyoming Outing Club and the Rocky Mountain Rescue Group, assisted in the recovery of bodies from the tragic airline crash on Medicine Bow Mountain, Wyoming, October 6.

Longtime member Stephen H. Hart was recently elected chairman of the Rocky Mountain Section of the American Alpine Club, which was instrumental in the publication of the first edition of the *Guide to the Colorado Mountains*. The second edition revised was made available in June.

The July issue of *Trail and Timberline* featured an article entitled "Keep Colorado Clean." The editors will continue to call attention to the problem of keeping the outdoors clean and will emphasize Bill #344, passed in the spring by the Colorado Legislature making it a misdemeanor to throw trash on highways and public lands.

The United States Geological Survey recently decided that a 53rd peak should be added to the state's 14,000-foot peak list. A C.M.C. party placed a register atop Missouri Mountain in the Sawatch Range on Memorial Day.

ANNE B. KENNON, *Executive Secretary*

Dartmouth Mountaineering Club. The only area to see action from the D.M.C. last summer was the Tetons. On September 2, Jack Breitenbach and Barry Corbet did the Durrance Ridge of Symmetry Spire as a warm-up, then met Wayne Hamilton of Dartmouth and George Mattson of the University of Montana the next day. Breitenbach and Corbet did Teepe's Pillar (Kraus Route) that afternoon, and returned to join the other two at the Petzoldt Caves for the night. On the 3rd all four climbed the Petzoldt-Exum Route on the Grand; all were much impressed by the excellent climbing. The following day, Breitenbach and Corbet tried a new route on the Middle Teton. Starting up the face of the shoulder which is visible from Garnet Canyon, they kept just to the left of the big cleft

which bisects the face. Alternate friction pitches and short overhangs provided very interesting rock work, highlighted by a courte echelle and three or four 6th class pitches. The party reached the top of the shoulder about four hours after leaving the caves. By virtue of the lack of pitons or signs of previous use, it is believed (or hoped) that this is a first. The climb combines a high standard of difficulty with very solid rock. The party proceeded to the south summit, but, because of the necessity of being back at Jenny Lake at a pre-arranged hour, did not have the time to reach the true summit. The south side provided an easy descent route, complicated only by one long rappel.

Hamilton and Mattson left on the night of the 5th to return to Yellowstone Park. On the 6th and 7th, Breitenbach and Corbet did the C.M.C. route on Moran, which was declared a great disappointment. Traverses of the knife-edges of both Horns and Moran were scheduled for the 8th, but deteriorating weather finally ended climbing. This anticlimax ended the Teton climbing for the summer.

Back at Dartmouth, the Club ran its usual rock-climbing class, injecting a little rescue technique as a new twist. Week-end climbing on the many local practice cliffs prevailed until Thanksgiving, when snow technique and cold weather survival took over. The club is attempting to initiate a winter ice-climbing and above-timberline camping program this year, in preparation for bigger climbs.

A very interesting trip is planned for the 1956 summer, but all the details have not yet been decided. This trip will be followed by another visit to the Tetons. The D.M.C. is looking ahead to an expanded program of all phases of mountaineering. BARRY CORBET, *President*

Harvard Mountaineering Club. In keeping with a general rise in interest in mountaineering, 1955 was the most active year in club history. Undergraduate, graduate, and alumni members were active in major expeditions to all parts of the world.

The most ambitious project was Harry Francis' Karakoram Expedition composed of one undergraduate and five graduate members, described previously in this *Journal*. It is felt that this wholly successful venture will encourage other expeditions to regions previously thought out of reach to qualified college mountaineers.

The club's fourth climbing camp led by Ted Scudder was as successful as the previous three in teaching the safe techniques in big mountains for beginners. Nineteen climbers made 13 ascents including two probable first ascents in the Mt. Purity area of the Southern Selkirks.

Club members also made spectacular first ascents in the Logan Mountains of Canada's Northwest Territories, also described previously. A four-man party climbed in the Purcell Range, turning back from unclimbed Mt. Stockdale (10,100 feet) because of unexpectedly difficult rock pitches near the summit. Dave Bernays participated in the first ascent of the Central Spire of Howser and with Fran Harris did the third ascent of the North Ridge of Mt. Baker (first ascent for a female). Club members climbed in the Wind Rivers, doing a second ascent of Shark's Nose and several other peaks. Others climbed in the American and Canadian Rockies, as well as the Grand Teton.

On the local scene, week-end respite from textbooks was found by many at the Shawangunk and New Hampshire climbing areas this fall. The winter program has begun with unprecedented enthusiasm, with excellent ice climbing available in New Hampshire.

The usual intensive safety program continues with belay practices and first-aid instruction. A much needed first-aid cache has been installed high up in Mt. Washington's Huntington Ravine by the club. It is equipped to handle any winter or summer accident. CRAIG MERRIHUE, *President*

Iowa Mountaineers. The club sponsored 19 week-end climbing outings to climbing areas in Iowa, Illinois, and Wisconsin. Ten 20-mile conditioning hikes were scheduled as well as several dozen shorter hikes. A number of seasonal social activities were held and a series of 18 professional adventure travelogues sponsored which included lectures about recent mountain expeditions.

John Ebert led a four-week climbing expedition to Alaska. Thirty-one participants camped and climbed in the Black Rapids-Castner-Gulkana glacier areas. Five mountains were ascended, of which two in the Black Rapids glacier area and one near Rainbow Mountain were first ascents. Permanent registers were placed on each of these peaks. Bill Primak and Harvey Carter led a 27-member outing to the Tetons of Wyoming. A 10-day base camp was maintained at Amphitheater Lake. Ascents were made on the Grand Teton, Middle and South Tetons, Nez Percé, Mt. Owen, Teewinot via Amphitheater Lake and a route which may be the easiest and shortest on the mountain, and the east ridge of Disappointment Peak (possible second ascent) and descent by way of a northwest crack (first descent). JOHN EBERT

Mazamas. The climbing program in the Mazamas continued its expansion as it has each year since the war. There were 770 individual

ascents—more than any previous year, and no accidents. The club's climbing school expanded to an average attendance of 200 at each of the indoor sessions. The annual outing was held at Lake O'Hara in the Canadian Rockies. The weather on the outing cooperated until there were 90 individual ascents, including two climbs of Mt. Victoria led by Joe Leuthold. The climbers' outing was held at Cascade Pass in Washington. Since the one-week trip did not allow the climbers to ascend everything in sight, they will return the first week of August 1956. During the outing, there were one first ascent and one second ascent on East Triplett, originally climbed by Fred Beckey. Joe Quigley and Gordon Renard made the first ascent of an unnamed peak (*ca.* 7,000 feet), located at the end of the valley east of the pass and next to Magic Mountain. The climbing season ended with a glacier rescue school held at Cloud Gap Inn and Eliot Glacier on Mount Hood, with lots of cooperation with the Hood River Crag Rats.

JOHN BIEWENER, *Climbing Committee Chairman*

M.I.T. Outing Club. Located as we are in the East, it is essentially impossible for the club to conduct any expeditions of note. However, we do a large amount of small scale mountaineering and considerable rock climbing, and each year one or two club members do succeed in getting West to take part in climbs of greater extent. During the past summer two former M.I.T.O.C. members, David Bernays and Raymond D'Arcy, participated in a trip to the Logan Mountains.

The Advanced Rock Climbing Committee of M.I.T.O.C. is writing a manual of rock climbing to be completed early in 1956.

GARDNER PERRY III

Princeton Mountaineering Club. On June 17, 1955, Kerck Kelsey (President), Tom Tifft, Dave Isles, Terhan Tirana, Guy Williamson, and Bruce Carrick assembled in the Club station wagon and departed for Glacier, B. C. The party reached the Illecillewaet camp grounds on the 23rd and received much information from Mr. Beede, the parkkeeper, about the Hermit Range, our immediate objective. We turned toward the Hermit Trail which led to Mt. Tupper (9,239 feet). That afternoon we pitched camp at about 7,000 feet, just above tree line. Our first campsite in the snow proved comfortable but wet. On the 24th, we crossed the snowy approaches to the rock and began our climb involving snow work, rock scrambling and moraine climbing, stopping for lunch on the false summit. We then continued on rock until reaching the top. The sunlight was

starting to disappear, so we ran, stumbled, and glissaded back to our campsite in a flurry of snow, and restored ourselves on frozen orange juice.

The next day, the party descended to the Illecillewaet camp grounds to dry out and spend the night. The following morning the food supply was replenished, and we started up the trail to Mt. Sir Donald (10,800 feet), camping next to the Perley Rock Trail at 6,800 feet.

On the morning of the 26th we made a late start for Sir Donald. A creek formed the first part of our trail and led to a steep grass slope which we followed. Snowy ridges soon presented themselves, and we began the endless job of traversing them. The snow began to blow intermittently, later turning into a blizzard. We could not find the summit. Since the hour was late, we descended to camp. At the lower levels of our day's climbing, the sun had melted much of the snow and several avalanches broke near us. The constant rumblings of avalanches in other parts of the valley convinced us to descend on the rock facing the Illecillewaet Névé. The next morning clouds covered the mountains, and we returned to the Glacier railroad station and headed to our summer jobs.

THOMAS R. TIFFT

Rensselaer Mountaineering Club. Spring activities of the Rensselaer Mountaineering Club consisted largely of rock-climbing trips to the Shawangunk cliffs with the accent on the development of leaders. The club's annual ice climb of the dyke on Mt. Colden in the Adirondacks was thwarted this year when a 13-member party encountered two feet of new snow instead of ice in the dyke. This trip is intended to provide instruction to beginners in ice techniques.

The summer months of 1955 saw members of the R.M.C. in the Cascades, Sierra, Wind Rivers, Tetons, and Colorado Rockies, with the official club expedition being into the Wind Rivers. The six-man party camped for eight days at the foot of the Dinwoody Glacier and succeeded in ascending eight of the surrounding peaks, including Gannett via the northern snowfields. The trip served as an introduction to western climbing for three of the men.

The R.M.C.'s regular rock-climbing training program got underway in the fall with a class in the fundamentals of rope techniques, belaying, and signals followed by a practice climb at the Grafton cliffs near Troy, where these principles could be demonstrated under controlled conditions. Apt beginners were then introduced to climbing at the larger and more extensive Shawangunk cliffs.

The past year has been a successful one for the club with an unusually large influx of members. However, it will always be a problem to develop capable leaders in the span of a man's undergraduate education.

CARL HENRIKSON

Sierra Club. Mountaineering activities continued on many fronts during 1955. Group outings during the summer included High Trips or Base Camps in the Tetons, Glacier National Park, Mount Rainer, northern Yosemite National Park, and the Minarets and upper Kern River in the central and southern Sierra. A considerable amount of climbing was done on all these trips. In the Tetons ascents were made of Mt. Bannon, Buck Mountain, South Teton, and the Grand Teton. A large group from the Rainier trip climbed Mt. Hood. In the Sierra new ascents were made on the Sawtooth Ridge and elsewhere. Knapsack trips, smaller than the High Trips, also ranged far and wide. One visited the Franklin Glacier in British Columbia, where an ascent of Mt. Vigilant was made. Others went to the Cascades in Washington, to the southern and central Sierra, and to the Marble Mountains of California.

Individual trips by Sierra Club members covered many regions. Popocatepetl was climbed by Floyd Burnette, Ray deSaussure, Glenn Cushman, Mary Ann Corthell, and Bob Swift. Jim Wilson, George Whitmore, and Dave Rynin visited the Bella Coola region. Dirk Irvin participated in an ascent of Mt. Robson. Rynin, Irvin, Mark Powell, and Mike Sherrick were in the Bugaboos. A number of climbs was made in the northern Selkirks by Mary Ann Matthews, Dick Irvin, Don Goodrich, Dave Rynin, and Mary Kay Pottinger. Sully Cooper, John Ohrenschall, Mark Powell, and Merle Alley made a second ascent of Brussels Peak in the Canadian Rockies. Many other parties climbed in the Tetons and in the High Sierra.

Rock climbing continues a favorite sport of Californians. In Yosemite Valley many famous ascents were repeated, including the Lost Arrow and the north face of Sentinel Rock. New climbs included a traverse across the face of Middle Cathedral Rock by Dick Long, Bob Skinner, Jack Davis, and George Mandatory, and the east buttress of Middle Cathedral Rock by Warren Harding, Jack Davis, and Bob Swift. A new route on the Higher Cathedral Spire was made by Dick Long and Jim Wilson. A serious attempt was made on the vertical northwest face of Half Dome by Jerry Gallwas, Warren Harding, Royal Robbins, and Don Wilson. Some fine rock climbing was done on the towers of the Monarch Divide in Kings Canyon National Park. Other interesting climbs have been found along Highway 50, near Lake Tahoe.

The Sierra Club has published a number of items of interest to climbers. In 1954 *A Climber's Guide to the High Sierra* was published as a memorial to William Shand, Jr. *A Climber's Guide to Pinnacles National Monument* was issued in pamphlet form in 1955. The club plans to publish a new guide to the Tetons, by Leigh Ortenburger, in the future. A popular reprint, *Belaying the Leader,* by Richard M. Leonard and Arnold Wexler will soon be out in a new edition. Other reprints of interest are: *Safety Last?* by Morgan Harris, and *A Rope Length from Eternity,* by William Siri.

In view of a considerable number of accidents or near-accidents, the Mountaineering Committee has recently increased safety activities. These have comprised frank discussions among climbers, articles in the monthly *Sierra Club Bulletin* and the biweekly news sheet, distribution of the *A.A.C. Accident Report* to all climbers, follow-up on accidents, and better training methods. One important problem is that of reaching climbers who do not belong to clubs.

A Mountain Rescue Service, designed to offer help to public agencies when class 4, 5, or 6 climbing is involved, has been set up by the Sierra Club in the San Francisco area. About 30 climbers are participating, under the leadership of A. W. Baxter, Larry Williams, and Ron Hahn. Arrangements have been made with the National Park Service, National Forest Service, and State Park Department for the routing of calls to a group of key personnel in case of need. The Rescue Service has, we are glad to say, had very few calls as yet. Members have continued the gathering of suitable equipment, and have carried on a program of practicing various rescue techniques. Climbing groups in Los Angeles, Fresno, and San Jose have also been active in rescue practice.

HERVEY H. VOGE, *Chairman, Mountaineering Committee*

Southwestern Mountaineers. Since the initial meeting of our climbing club was in October 1955, our lack of collective experience caused us to postpone any major climbs for that year. We have, however, established a short training course in the fundamentals of rock climbing, emphasizing such features as belaying, rappelling, and rope tension climbing, using as guides such publications as the excellent *Handbook of American Mountaineering* and the Sierra Club pamphlet *Belaying the Leader.*

Shortly before the organization of our club, an accident occurred in the local Organ Mountains by a party consisting of military personnel from nearby White Sands Proving Ground, resulting in the death of one and the injury of a second person. Subsequently, the Provost Marshal of this base

requested that our club furnish a list of safety rules to be used as a guide for military personnel at White Sands wishing to climb in the future. We complied, emphasizing the point that hikers inexperienced in rope and piton work, should avoid exposed slopes, the reason, insofar as we could determine, of the accident.

Our southern locality and lack of opportunity for major expeditions excludes us from extensive snow and ice work, so we plan to specialize in rock climbing.

The Organ Mountains, in which we do most of our climbing, extend in a north-south direction for about 30 miles with an average depth of about 10 miles. They rise from the desert floor to a height of over 9,000 feet, and consist of rhyolite and granite spires, getting their name from the fact that they resemble the pipes of an organ. Their climbing history was meager until after World War II when German rocket scientists from White Sands Proving Ground undertook some of the more difficult ascents. There are an estimated 20 spires requiring rope tension methods. We cordially invite any members of the American Alpine Club who are interested in rock climbing to visit our Organ Mountains and climb with us.

HARRY S. DAVIS, *President*

Stanford Alpine Club. March 1955 saw Stanford Alpine Club members in both the Tetons, where an attempt was made on the Grand, and in the Sierra Nevada, where a successful ascent was made of the east face of Mt. Whitney. During April, May, and June, Sunday practice climbs were held with one Sunday reserved for practicing the dynamic belay in which falls up to 50 feet were simulated. Two successful week-ends were spent in Yosemite Valley, and the first club journal was published in June.

As usual the summer was full of activity, with two members in the Peruvian Andes, while others climbed in the Swiss Alps, Bugaboos, Wind Rivers, and the local Sierra Nevada. Three ascents including Huascaran and North Pucahirca were done in Peru, while a fifth ascent of the Matterhorn by the original Whymper route was done in the Swiss Alps. Other notable ascents include that of Snowpatch Spire and Gannett Peak. In the late summer almost every club member met in the Tetons to end his summer of climbing.

The fall did not see a lack of difficult climbing even though much time was spent in instructing new members in the techniques of climbing. Trips to both Yosemite Valley and Tuolumne Meadows (where a first ascent of Eichorn Pinnacle from the base was made) were well attended. Rain during Christmas vacation dampened most plans for climbing and resulted in

most members being in one of two places—Pinnacles National Monument or the Sierra Nevada.

Skiing has continued to be the principal activity during the winter with ski touring supplementing the usual downhill skiing. However, Pinnacles has received much attention with parties climbing there almost every week end. GORDON M. GREVE, *President*

Wisconsin Hoofers. By reason of location we are predominantly a rock climbing club and do most of our climbing on quartzite bluffs at Devil's Lake, Wisconsin, about 40 miles north of Madison. Usually early in the school year we devote meetings to instruction for the benefit of our new climbers. Instruction in knot tying, rope signals, rope handling, climbing techniques, and safety is given. The new climber is told of the position of leader, his responsibility and importance in the group. Our safety program consists of a weekly report by a member of the club who selects an accident from the A.A.C.'s booklet of *Accidents in American Mountaineering* and reads it aloud. A general discussion follows as to analysis and how a similar accident might be prevented at Devil's Lake.

Mid-June found six of us in the Tetons where we made the conventional ascents. We camped in the Jenny Lake campground for a few days and later moved up to Garnet Canyon, where we found the Colorado Club. In fine weather we climbed South and Middle Tetons, Cloudveil, and Nez Percé.

In late August we entered the Adamant group in the southern Selkirks. Particular difficulties were encountered on the packing in, and we recommend a rubber boat for future climbers for crossing the Columbia River. Among the climbs were Horn and Unicorn, Fria, Pioneer, Toadstool, a traverse of the Damon-Sentinel ridge, and the southeast peak of Adamant Mountain. This latter mountain was attempted five times on four different routes. SUSAN F. WARD, *Vice-Chairman*

Yale Mountaineering Club. Although members of the Y.M.C. have been active in many of the ranges of this country and in Alaska and Europe during this past year, no overly sensational ascents were made.

It is still premature to state the outcome of our present negotiations with the Connecticut State Park and Forest Commission, by which we hope to reopen Connecticut State Parks to climbers on a basis similar to the systems used in the National Parks. When and if our efforts are crowned

with success, they should be an outstanding example of public relations and cooperation between climbing interests.

ERIC S. CHENEY, *President*

Mountain Rescue Council, Seattle, Washington. Numerous American Alpine Club members were active as leaders and members in the Mountain Rescue Council, during the past year. This organization, born in Seattle, Washington, about 1947, has since become an effective and widespread instrument for rescue. Several thousand dollars worth of equipment, including a Rescue Truck (stored for us at Washington State Patrol Headquarters in Seattle) is kept at constant "ready" for use on rescues.

A number of rescues was accomplished in the Cascades during the last year; however, the fine work of the Coast Guard helicopters took much of the back-breaking work out of some of these operations. On at least three different occasions injured climbers who would have required large rescue parties working over difficult terrain were rescued in a matter of a few hours by a combination of good piloting and breaks in the weather. These rescues, nevertheless, required the cooperation and effort of many M.R.C. personnel, and were only possible because of numerous practice maneuvers and conferences between Coast Guard and M.R.C. people.

One such maneuver, held at Stevens Pass in the Cascade Mountains in Washington on June 11 and 12, 1955, was participated in by more than 100 persons. Some were from such far points as Colorado and British Columbia. Many A.A.C. members participated in this problem, including Ome Daiber, Pete Schoening, Dee Molenar, Willi Unsoeld, Otto Trott, Ward Irwin, Ralph Johnson, Kurt Beam, James Harrang, Arne Campbell, and Bill Degenhardt.

The June operation was nearly as complicated as a beachhead landing. It featured a simulated rescue from one of the high ridges overlooking Stevens Pass. The three "injured" persons, having spent Saturday night bivouacked on the ridge, were actually "found" the next morning by an MRC search party, working in cooperation with a Civilian Air Patrol airplane. Radio communications were established and a Coast Guard helicopter called in. The 'copter shuttled expert "rock" teams to a nearby ridge and these teams rapidly evacuated the injured persons over a series of cliffs, using both cable and rope systems. When the victims were at a low enough elevation for the 'copter to land, the big bird came in smoothly, on a snow-covered platform marked by fir boughs, and quickly picked up and carried to the highway the "litter" cases. Others who

aided or observed this operation included the Navy, Army, Air Force, Forest Service, National Park Service, Sheriff, Civilian Air Patrol, Washington State Patrol, and Ski Patrol.

A second and smaller training operation was conducted at Mt. Erie in Washington on October 15, 1955. Emphasis at this maneuver was placed on training in mechanical advantages, knots, cable systems, and methods of crevasse rescue.

During the year Pete Schoening replaced Ome Daiber as Chairman of the M.R.C.

More recently Bob and Ira Spring were asked by the M.R.C. to produce a first rate Mountain Safety training film, to be used before such groups as the Boy Scouts and various school groups and others who are interested. The film has received substantial financial backing (from contributions) and is receiving wide interest in this area. It will probably include sections of (1) planning, (2) basic equipment, (3) fire and subsistence, (4) terrain hazards, (5) mental stability, (6) proper return. Bob and Ira hope to have the film ready for showing during the school year of 1956-57.

It is hoped that by this film and the numerous lectures and other written matter put out by the M.R.C., the accidents among climbers can be kept at a minimum. RALPH W. JOHNSON

Rocky Mountain Rescue Group. The group was formed in 1947 by mountaineers who were concerned about the large number of mountaineering accidents in the area and about the way the rescues were performed. For a number of years it was little more than an organization on paper led by a person who had a list of telephone numbers of people who had said they would go on a mission if they were needed.

In 1951, the Group was incorporated under the laws of the State of Colorado for the purpose of protecting individuals within the group and for the purpose of soliciting funds with which to continue operation. In addition to this, it was felt that a central organization might be conducive to the formation of other rescue teams in the Rocky Mountains. For some years nothing was done, however, about starting new units, with the exception of a unit at Leadville, which was formed by interested members and which became a sort of sheriff's posse and Civil Defense organization.

Boulder, of course, is the oldest unit and has the largest membership. Very recently the board of directors accepted a new unit in Laramie, Wyoming, consisting of 30 or so interested students at the University here. Since it is a corporation policy that each unit member of the R.M.R.G. hold the American Red Cross advanced first-aid card (other than this, each

unit may decide its own membership requirements), final action on the Laramie Unit will have to come after a sufficient number of their members have met this requirement.

In the Boulder Unit there are several townspeople, but most members are students at the University. Therefore, there is a rapid turnover in membership. New prospective members come in every semester and the older members graduate. Although accidents in mountaineering in this area seem to be on the decline, new members have a chance to learn rescue techniques through our training program, which consists of weekly lectures and frequent practices in the field. The unit works with the American Red Cross as the Boulder County emergency first-aid detachment, and provides instructors for nearly all of the first-aid classes here. In addition to this, the group conducts a school in rock climbing each semester, which is open to the public. It may be significant to note that since these classes started in 1949, there have been no fatal mountaineering accidents in the Boulder area.

To become a "Qualified" member of the Group a person must, as mentioned above, hold a valid A.R.C. advanced first-aid card, he must have been a prospective member for four months, he must attend three-fourths of the training meetings during the time he is a prospective member, and he must participate in a certain number of field practices which are evaluated on a point system. When these requirements are met, the prospective member is voted upon by the qualified membership, who take into account his experience, skills, and abilities in mountain rescue.

Two of our most recent missions took place on Devil's Thumb, a rock formation near Boulder, and the UAL plane crash at Laramie, Wyoming. The former will appear in the A.A.C. report on accidents, and the latter has been amply covered in the press and in this *Journal*.

RAYMOND M. BATSON

Scientific Notes

RECENT GROWTH OF GLACIERS IN THE PACIFIC NORTHWEST

Approximately 90 per cent of the total area covered by glaciers in the United States is found in the Olympic and Cascade Mountains of Washington State. Altogether, Washington's glaciers cover a cumulative area of some 225 square miles, which by way of comparison, represents approximately one-third of the cumulative area of all glaciers in the European Alps.

In the mid-19th century these glaciers began to shrink and retreat, as did glaciers in several other mid-latitude regions in the world. During the late 1930's and very early 1940's shrinkage of these glaciers became so great that it could be described as catastrophic.

In 1944, however, Arthur Johnson[1] of the U.S. Geological Survey discovered that the highest parts of the Nisqually Glacier on Mt. Rainier had ceased to shrink and were growing in ice thickness. In 1950, Kermit B. Bengston, currently a graduate student at the University of Washington, found that the Coleman Glacier on Mt. Baker has begun to advance.[2]

In 1953, the writer began an investigation to determine whether increased activity on Nisqually and Coleman Glaciers was an isolated, anomalous phenomenon, or was indicative of a general reversal in glacier activity from the widespread shrinkage of glaciers which had been the pattern for the past several decades.

From 1953 to 1954, 25 glaciers were checked by several observers by taking comparative photographs of the glaciers one year or more apart. In the fall of 1955, a flight was made over the Northern Cascade ranges by the writer and Edward La Chapelle of the Forest Service, Alta, Utah, and photographs were made of 48 glaciers which had previously been aerially photographed by the Geological Survey in 1950.

Altogether by 1955, a total of 73 glaciers was observed. Observations show that at present 50 of these glaciers are advancing. At least one of the glaciers, the Boston Glacier in the Northern Cascades, has advanced at an average rate of one foot per day for the past five years and in this time has increased its over-all length by approximately 10 per cent. Several

[1]Johnson, Arthur, "1946 Progress Report on Nisqually Glacier, Washington," on file, Office of Water and Power Branch, Conservation Division, U.S. Geological Survey, Tacoma, Washington.

[2]Bengston, Kermit B., "Coleman Glacier Studies, Mt. Baker," *Mountaineer*, v. 43, No. 13, pp. 36-37, Dec. 1951.

other glaciers have been advancing at average rates from 100 to 250 feet per year for the past five years, and in this time have increased their total lengths from three to five per cent. Observations further indicate that the remaining 23 glaciers are all growing, although their termini are not yet advancing.

An analysis of local climatic data demonstrates a present trend toward a cooler, wetter climate in Western Washington. The 10-year running mean annual temperature at Tatoosh Island off the coast of Washington has decreased approximately 1.5°F from the period 1934-1943 to the period 1945-1954. In the same time interval the 10-year running mean annual precipitation at Tatoosh has increased 15 inches and during the last decade has reached its highest value since the period 1898-1907.

In the history of modern glaciers it is known that similar growth of glaciers in many parts of the world, followed by glacier shrinkage, occurred in the 17th, 18th, and 19th centuries. It is possible that this pattern is now being repeated and before long, glaciers in other mid-latitude regions of the world may begin to advance.

A coordinated study of glaciers all over the world is planned during the International Geophysical Year, 1957-58. It is expected that these coordinated world-wide observations will reveal most significant evidence on the present trends of world-wide climates, and to what extent the growth of glaciers in the Pacific Northwest of our country may be significant as one indicator of a new trend in climatic change.

RICHARD C. HUBLEY, *Glaciology Headquarters, U.S.N.C. for I.G.Y.*

GLACIAL ADVANCE ON MOUNT BAKER

The Coleman Glacier on Mt. Baker, a 10,750-foot volcanic peak in Washington State, occupies on the north the natural depression formed at the junction of the present summit cone and an older volcanic cone somewhat to the side. It extends from the summit of the mountain down to about the 4,000-foot level and was first observed to be advancing in 1949. This year a visit in late September to the glacier showed the advance to be continuing and accelerating. Considerable thickening of the Coleman has occurred since last year at 6,000 feet, thickening has occurred at 4,900 feet despite the dry, sunshiny summer, and the terminus has pushed another 250 feet down valley for a total advance along the surface of the ground of about 1,000 feet since 1949. Late in September the glacier surface was still covered with last year's snow down to about 5,800 feet. This means more snow was received than melted on about 80 per cent of

the glacier surface and assures that the advance will continue at least one or two more seasons.

The adjoining Roosevelt Glacier has advanced to a series of lava cliffs formerly 500 to 700 feet removed from the Roosevelt terminus. Enormous ice avalanches, due to séracs being pushed over the lava cliffs, were enjoyed at a comfortable distance by the September observing party from the vantage point of Bastille Ridge to the east of both the Coleman and Roosevelt Glaciers. The observing party while on Bastille Ridge laid out a photogrammetric base line 662.1 feet in length, did the necessary control surveying, and made stereoscopic pairs of photographs of the entire glacier system, using the University of Washington's T.A.F. photo-theodolite. These pairs of photographs are now in Munich, Germany, where Dr. Ing. Walther Hofmann is constructing a detailed topographic map of the area from them. Such a map will be used with future data to calculate changes in ice volume of the glacier.

The advance of the Coleman and Roosevelt Glaciers may indicate something worthy of much more than passing interest on the part of mountaineers. Last summer R. Hubley[1] found that many glaciers in the North Cascades and in the Olympics are advancing. Some, particularly in the Glacier Peak area, are advancing as spectacularly as the Coleman. This widespread increase in glacial activity indicates that the trend toward a warmer and drier climate, which has been world-wide since the latter part of the 19th century, has been reversed in the northwestern United States. How long the reversal will continue, how severe it will become, and how extensive it will be can only be determined as observers the world over continue to make observations of glacial activity.

KERMIT B. BENGSTON

AN ACTIVE GLACIER IN NEVADA

Some years ago I ran across an article in the "Fifth Annual Report of the United States Geological Survey, 1883-84," entitled: "Permanent Ice on the Mountains of the Great Basin." It described a body of ice on Jeff Davis Peak, now known as Wheeler Peak, in eastern Nevada. Illustrating the article was a fine engraving of the mountain's impressive north cirque, showing the upper two-thirds of the ice body, but the lower portion was hidden by an intervening ridge.

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[1]Hubley, R. C., Journal of Glaciology, In Press, 1956, "Glaciers of the Washington Cascade and Olympic Mountains; Their Present Activity and Its Relation to Local Climatic Trends."

The report describes the climate as arid and the country desertlike throughout, and states that "A region more unfavorable for the formation of glaciers could scarcely be found; yet, as shown by the observations of Mr. William Eimbeck, of the United States Coast Survey, there is a body of ice on Jeff Davis Peak, one of the highest mountains in the Great Basin, that approaches the condition of a glacier . . ." Mr. Eimbeck saw the ice mass in August, 1883, and his notes record that it was then about 1,500 feet in length, with an average width of 200 feet. "The surface of the ice was without fissures or moraines," he wrote, "yet evidently possessed a definite structure as indicated by different tints and shades of bluish green. . . . Nothing resembling a moraine could be seen near the foot of the ice, but ancient moraines occur about a mile down the canyon, which record the lower limit of the ice stream which formerly flowed from the same cirque, that shelters the present ice body."

Albert Marshall of Three Rivers, California, and I met August 29, 1955, and spent five days knapsacking in the sub-alpine and alpine country at the head of Lehman Creek, climbed Wheeler Peak (13,061 feet) August 31, and entered the cirque September 1. Although the precipitous walls and jagged rim of the cirque are the most prominent features of the landscape, we found that we could not see its floor from any point outside. Nor did we note signs of ice, except for two small patches wedged in crevices high up on the cirque walls. We were particularly surprised that even Wheeler's north ridge and summit gave no views into the cirque whatever. However, just below the top, the lower part of the fresh moraine, with its pointed snout, is visible. The surface clearly shows a series of crescentic, down-curving bows, resembling flow lines, apparently the result of alternating bands of thicker and thinner material. Then, by working down the extremely rotten and dangerous slope east of the summit, we were able to see a small section of the cirque's walls and floor. There, at last, we found that the ice body described by Mr. Eimbeck 72 years before, not only still existed, but that its surface was broken by what appeared to be a bergschrund, a secondary bergschrund and, below these, five parallel crevasses.

Reaching the cirque next day proved to be an arduous scramble over loose detrital and morainal rock piles in an unbelievable state of instability. And, as usual, we did not even get a glimpse of the cirque until we laboriously passed the cliff-like portals and were within it. Then, we were immediately struck by the awesome and spectacular nature of the place. It bears a remarkable resemblance to the east face of Longs Peak, and rivals that famed Colorado cirque in size and grandeur. The walls rise in precipitous cliffs, 1,500 to 2,000 feet, and Wheeler Peak soars impressively in an

almost perpendicular unbroken rock face. Our surmise from the quick preview of the day before was confirmed. There, before us, cradled in this gigantic rock basin lay an active glacier. Névé, bergschrunds, crevasses, and a moraine in the process of being formed were readily apparent.

Greatest activity is centered on the east, or true right, side. Here a double ice tongue, divided at its lower end by a rock island, slants steeply up an angle in the cirque wall, and extends about two-thirds of the way to the top. Near the lower part of the more easterly section a prominent bergschrund (that seen from Wheeler's summit) cuts completely across the ice from the rock island to the true right margin. This bergschrund is well developed, is apparently from five to ten feet wide, and bows slightly upward at the center. Below it is a secondary bergschrund, equally wide, but extending from the true right margin less than half way across the ice tongue. On the ice apron below where the tongue joins the main ice body on the floor of the cirque, are five crevasses, one above the other. Although these were the crevasses seen the day before from near Wheeler's summit, from the cirque's entrance they are hidden by a large mound of fresh moraine, described below.

The west section of the ice tongue appears slightly less active, but shows a bergschrund cutting completely across it in a straight line, narrower than the first and at a higher elevation. A third bergschrund, to the west, parallels the upper margin of the main ice body against the cliffs, and is only a few feet below it. Here the glacier shows a slower rate of motion and has moved but a short distance from the cliffs, leaving a narrow fringe of névé clinging to them. Further west, directly under the summit of Wheeler Peak, ice presumably underlies the heavy mantle of moraine. Thus the whole upper end of the cirque probably contains ice, but in the west section it is apparently now stagnant.

The before-mentioned moraine tongue, which terminates in a point about a half mile down the cirque, possibly also may be underlain with ice. However, if so, it, too, is stagnant, for the moraine's outlines have the rounded appearance of stability and a few green patches of arctic willow are growing on its sides. But perhaps the glacier's most notable feature is a great mound of unstable moraine, about 100 feet high, that rises sharply, 500 to 600 feet behind the snout. This has every appearance of being the active front of the glacier, which in recent years has been advancing and pushing forward over the surface of the older moraine. Its front and sides break sharply into steep-pitched slopes down which rocks, stone and dirt appear to have been cascading. Although surprising, such indications of recent advance are in line with several glaciers in California's Sierra Ne-

vada and the Pacific Northwest. They show that a slight oscillation of climate favorable to snow storage and glacial increase has occurred during the past 15 years.

A considerable stream drains the glacier, but the floor of the cirque is so heavily burdened with loose rock that the water flows beneath the surface for more than two miles down the canyon. Although we heard it at several points we were unable to check it for degree of milkiness and glacial silt. In fact, the amount of rock, stones, and dirt falling from the loose quartzite cliffs is enormous, and far beyond the power of the glacier to transport. Even the open ice was so discolored by the constant cascades of rock material that its surface was difficult to distinguish from the adjacent cliffs. Anyone who examines the upper glacier will do so at considerable risk. To us it looked as dangerous a death trap as we had ever seen in the mountains.

The glacier is roughly triangular, its base being the upper end against the cirque cliffs and its sides coming to a point at the moraine snout. It is small, and its greatest dimension probably does not exceed 2,000 feet. But it is of more than usual interest, since it is probably the only true glacier in the entire Great Basin. WELDON F. HEALD

Book Reviews

EDITED BY HARRIET T. PARSONS

The Mountain World 1955. English version edited by Malcolm Barnes. 222 pages, 64 illustrations, 24 maps. New York: Harper and Brothers, 1955. Price $6.00.

The third annual volume published by the Swiss Research Foundation is even better than its predecessors—high praise indeed. These books have become essential reading for everyone interested in mountaineering, for they are the one authoritative and comprehensive source for almost all types of information relating to the mountains. The style of the various articles, each by a different writer, representing many different countries, is becoming more skillful and more attractive each year, and a wider range of subjects is covered.

In the 1955 volume we find a thrilling discussion of midget aircraft for landing on high snow shoulders (like that on K2), illustrated by high speed photographs of a swallow landing near her nest. Philosophy is here: a short but excellent chapter by Jayal on the guiding principles of the Darjeeling School of Mountaineering. There is also, and obviously, a long and good account of the tiny Austrian party which climbed Cho Oyu. Marcel Kurz summarized in "Himalayan Chronicle" a dozen other good expeditions. The photographs are as fine as any published, both in selection and in printing, for they are "bled out" to the page edges, as in my opinion, mountain pictures should always be. G. W. Young has written a fine introduction, the theme of which is the need for a better style in mountaineering prose. He urges us to put more literary effort into presenting the truth as we see it, and less into the mechanics of a climb.

It is unfortunate that the volume dated 1955 is published (in English at least) only at the end of 1955 and recounts the feats of a year earlier. Perhaps this time lag will be reduced. In my estimation this is the outstanding mountaineering publication today.

CHARLES S. HOUSTON, M.D.

The Book of the Mountains, edited by A. C. Spectorsky. 492 pages, 87 pictures, numerous sketches. New York: Appleton-Century-Crofts, Inc. 1955. Price $10.00.

This is a tremendous anthology that often takes the reader more into history, mythology and various specimens of archaic literature than most

mountaineers will appreciate. The book was not assembled for mountaineers; it is obviously aimed at the mass market, and in general does a good job in that respect, although some of the dull inclusions are hard to justify on any grounds. For instance, "Journey to the Glacier" is of interest only as an example of what apparently passed for good reporting in the year 1741. The mountain-loving reader may be irritated by reading several pages of Walt Whitman's notes just to find one sentence that expresses what influence mountains can have. But even such weird expressions as "aficionados of the craft of ski running" do not destroy the pleasure of Arnold Lunn's beautiful descriptive prose that follows. And the editor has written good introductions to the excerpts, which should help most readers to decide what they might pass over.

Those who take mountaineering seriously are advised to look to the original sources for their background knowledge and guidance. Those who read at random and for pleasure will find rewards in the well known and less well known classics of mountains and their influence on mortals. The pictures and sketches are very good; they alone may justify the price to many.

LAWRENCE G. COVENEY

Introduction to Mountaineering, by Showell Styles. 159 pages, 8 plates, 17 figures, glossary of climbing terms, bibliography, and 2 appendices. London, Seeley Service and Co. Ltd., 1954. Price 15 s.

The novice mountaineer must certainly learn technique from instruction and practice, but to the extent that it can be augmented by reading, "Introduction to Mountaineering" offers a very palatable literary diet. In an easy-going, almost conversational style, the author systematically discusses the basic tenets and techniques of mountaineering, emphasizing the very sound philosophy that rock climbing is but a part and not the whole of mountaineering, a distinction that sometimes escapes the neophyte's attention. The book is written for the novice and makes no pretense of attempting an exhaustive treatment of mountaineering practice, but the novice will find in it most of what he needs, together with a sprinkling of mountaineering philosophy and a generous portion of British mountaineering tradition. American readers may take exception to some of the belay techniques and the curious lack of emphasis on sound belaying, but on the other hand, we could all benefit from the rather pertinent chapter on "Manners and Traditions."

WILLIAM SIRI

The Technique of Mountaineering, by J. E. B. Wright. 144 pages, with 21 photographs, 132 drawings, and a glossary of mountaineering terms. London; Nicholas Kaye, 1955. Price, 10s 6d.

A climbing manual such as this, written by a professional guide, may be expected to have considerably more authority than similar books written by week-end climbers with a literary turn of mind. The official approval of the British Mountaineering Association bears this out and lends further authority to the book. The treatment of mountaineering technique is remarkably complete in that nothing is omitted, from map reading through to complicated mountain rescue methods. However, while some subjects are discussed at length, others that are seemingly no less important receive rather cursory treatment. Nevertheless, the manual is so concise, so comprehensive, and so profusely illustrated that one is almost certain to find the answer to "What do I do next" for any situation.

American readers will learn something of British mountaineering tradition and the great regard in which it is held. They might also be a little surprised by the qualified acceptance of such things as nylon rope, Vibram soles, and "ironmongering," and the outright rejection of modern concepts of belaying.

WILLIAM SIRI

Pilote Des Glaciers, by Hermann Geiger, with a preface by Felix Germain. 152 pages, with 48 illustrations, 6 pen drawings and 6 technical drawings by the author. Paris: B. Arthaud, 1955.

This is a fascinating and most unusual book by the famous Swiss pilot. Geiger has worked out new techniques for dropping supplies in inaccessible districts and for landing on terrain hitherto considered impossible of access to any winged things larger than chocards, the mountain crows whom he refers to as his best flying instructors.

We see Geiger first as one of the 13 children of a poor Valaisan carpenter, demanding as his own Christmas present a wooden aeroplane from his father. Later we see him at 14, working in a filling station at Sion and saving his meager tips to join a Glider Club; finally he saves enough to put himself through Aviation School. Once established as a pilot, he makes it his life work to develop flying in the High Alps. The rest of the book is given over to spirited descriptions of his daily life in his Piper Super Cub, dropping supplies of all kinds in high mountain places, rescuing victims of avalanches or mountain accidents, transporting people to spots they could only otherwise have reached after hours on foot or on skis. Geiger illustrates his techniques of landing and taking off in glacier terri-

tory by means of lively sketches. He has a great sense of humor and real love of humanity; his descriptions of dropping bundles of hay for starving chamois and other animals during the severe winters show him a true friend of animals, and some of his rescue work makes very exciting reading. Here is a real personality; a man who has created his own life work and who loves every aspect of it. The book will appeal not only to flyers and mountaineers, but to anyone who loves adventure.

URSULA CORNING

Abode of Snow. A History of Himalayan Exploration and Mountaineering, by Kenneth Mason. 372 pages; illustrations and diagrams. London: Rupert Hart-Davis, 1955. Price, 25 shillings. New York: E. P. Dutton Co., 1955. Price $6.50.

No one is better qualified to write a history of Himalayan exploration and mountaineering than Kenneth Mason. For more than forty years he has had intimate, on-the-spot knowledge of the range, its inhabitants, and its explorers. He was a member of the Survey of India as far back as 1909 and throughout many years conducted surveying expeditions in the remote areas; he was one of the founders of the Himalayan Club and the first editor of *The Himalayan Journal;* he has known practically every climber of Himalayan peaks in this century; finally, he has held the distinguished position of Professor of Geography at Oxford University. Much is to be expected of such an author, and an abundance has been given. Professor Mason's book immediately takes its place as the unrivalled authority in this field.

History and geography are admirably combined to present a comprehensible background against which one may place the almost overwhelming flood of accounts of recent climbs of the great peaks and the complicated journeys through gorges and across passes. At the very beginning Professor Mason breaks down for us the vast chain into its principal districts. He presents a diagram of the entire area, followed by individual sketch maps of the sections: Punjab, Karakoram, Kumaun, Nepal, Sikkim, and Assam. The main body of the book consists of five historical parts in which the principal explorations and climbs of each era are described. For instance, in Part V (1929-1939), we find: Kangchenjunga 1929, 1930, 1931; Kamet and Nanda Devi; Everest 1933-1938; Nanga Parbat 1932, 1934; Nanga Parbat 1937, 1938, 1939; Karakoram Exploration: Gasherbrum, Masherbrum, and Rakaposhi; K2; Kumaun Himalaya; Sikkim and Assam Himalaya; a summary of the inter-war period. These accounts

are not merely abbreviations of the original narratives, but woven in are critical analyses and expressions of opinion. As an example, in writing of the 1934 Nanga Parbat expedition, Professor Mason says: "So ended this attempt—in the greatest mountain disaster of our time. It is easy to look back and criticize. But it must be realized how little was known about the rapid deterioration of strength above 23,000 feet, especially under storm conditions . . . But there was also great heroism. Climbers and porters alike freely gave of their lives for one another." Of the 1938 K2 expedition he remarks: "Gambling on fine weather they could have gone higher and might just possibly have reached the summit, but they would never have returned and they wisely withdrew . . . Houston's decision . . . was wise. A great mountaineer, he knew when to turn back." But there is not always praise. By way of contrast we quote from the account of the K2 expedition of the following year: "(The leader) now made the fatal and almost inconceivable decision to go on, regardless of the consequences. . . . It is difficult to record in temperate language the folly of this enterprise. . . . Each day added to the errors of judgment. The weather was never to blame. The one redeeming feature was the heroism of (the Sherpas)." Almost every episode is summed up with similar discerning and often pungent remarks.

Among the many features of the book that make it indispensable to anyone, whether climber or reader, interested in the Himalaya are the appendices in which are to be found a table of the great peaks, showing their position, altitude, and the system, section, and group to which they belong; comments on the determination of Himalayan heights; a chronological summary, with references to pages in the text of the book; and a short bibliography.

In London last December I asked Professor Mason about the pronunciation of the name *Himalaya.* "Don't try to conform to someone's theory of its derivation," he said, "just use *Him-a-lay-a.*"

FRANCIS P. FARQUHAR

Ascent of K2. By Prof. Ardito Desio. Translated by David Moore. 239 pages, 57 illustrations, 3 maps in text. London: Elek Books. Printed in Holland, 1955. Price 21 s.

The most massive assault on any major peak in the history of mountaineering, hindered by worse than average weather, barely succeeded in putting two men on the summit of K2 late in the afternoon of July 31, 1954.

The English translation of this readable book is adequately illustrated. There are brief appendices at the end, a diary covering the period of organ-

ization as well as the expedition itself, but no index. Considerable scientific work was accomplished in addition to the actual mountaineering.

The climbing party, mostly professional guides, was chosen only after the most searching physical examinations and rigorous field tests in the high Alps. No Himalayan expedition before has had practically unlimited financial resources and such elaborate equipment, 16 tons of which was shipped from Genoa, all assembled in four months.

The most extraordinary phenomenon seen was a huge new glacier, formed when a great ice mass slid off Haramosh into the Kutiah valley, causing death and destruction, and threatening the entire Stak valley 40 miles northwest of Skardu. In 1953 this glacier is said to have increased its length eight miles in three months.

The leader, Ardito Desio, professor of geology at the University of Milan, was 57. Compagnoni, who reached the top, was 40, and his companion Lacedelli, 29. The other climbers ranged in age from 24 to 47, to average 33.

The actual story of the approach and attack on the mountain followed much the familiar pattern and is well recounted. Most of the 500 porters deserted when the Baltoro Glacier was reached. Smaller groups of porters were recruited, and with the help of a few Boltis and Hunzas and the climbers themselves Base Camp was established at the end of May. Placing camps up the Abruzzi ridge took all of June and most of July. Bad weather, and the death of Puchoz, one of the strongest climbers, at Camp 2 from pneumonia, and various minor accidents, delayed progress. Parties and individual climbers moved up and down the mountain, using the fixed rope almost as a trolley.

Luck was with Compagnoni and Lacedelli the last two days. July 30 at Camp 8 (25,400) the weather was perfect. In powder snow up to their waists and after climbing formidable rock pitches, they made Camp 9 at 26,500 feet. Two others, Bonatti and Mahdi, trying to bring up more oxygen and food, were benighted without shelter at 26,200 feet. On July 31, Compagnoni and Lacedelli had first to go down 300 feet to recover the extra oxygen, then, carrying 42 pounds each they started up. The rock had much more snow and ice than when Wiessner had been on it 15 years before. The climbing on rock, ice, and snow was difficult at times. The oxygen gave out, but acclimatized as the two men were this did not stop them, nor did they even throw off the heavy equipment. The cold became intense late in the afternoon—they estimated it at perhaps 40° below zero, but fortunately the air was almost still. At 6 P.M. they reached the summit in clear weather. On the descent both men had falls, but were only

badly shaken. At Camp 8 three other climbers and two Hunzas were there to meet them, and next day all started down together.

Desio comments at the end that the margin between success and failure may have been supplied by the party's mental attitude. They had set out with the object of *conquering* K2 and not merely *making an attempt.* That and perhaps their great reserves of manpower and equipment, plus luck with the weather at the climax (after much earlier buffeting) resulted in well deserved success. HENRY S. HALL, JR.

Kangchenjunga Challenge, by Paul Bauer. 202 pages and 12 illustrations. Foreword by Sir John Hunt. London: Kimber, 1955. Price, 18 s.

Paul Bauer, one of the famous climbers of this century, here recounts the story of the Bavarian attempts to climb Kangchenjunga from the northeast in 1929 and 1931. The story is factual and undramatic, but it describes probably the finest craftsmanship in ice climbing displayed by any expedition to the world's highest mountains. The obstacles that the Bauer parties overcame on the northeast spur are still amazing, and it must be remembered that the climbers used no oxygen. An interesting feature, of course, was that at several of their 11 camps, the Germans saved the weight of tents by using snow caves. Bauer also describes early climbs in the Caucasus and the ascent of Siniolchu, as well as retelling the classic stories of man against snow and ice on Kangchenjunga. ROBERT H. BATES

Kangchenjunga, by John Tucker. 217 pages and 34 illustrations. Foreword by Sir John Hunt. London: Elek, 1955. Price, 21 s.

John Tucker's pleasant story of the reconnaissance of the southwest side of Kangchenjunga in 1954 will not become a classic, but it is remarkably light hearted and uninhibited. It summarizes earlier attempts on the mountain before describing the experiences of the group led by John Kempe in 1954. These men showed no thoroughness in planning or preparation; nothing about the group smacked of big business or of a military campaign. Instead, its informality is delightfully shocking and refreshing.

This small party to the southwest face of Kangchenjunga tested an idea formed by Gilmour Lewis in 1951, and developed by him and Kempe in 1953 when they examined Kangchenjunga from the summit of Kabru (24,006 feet). They thought that a route might be forced up the great icefall of the southwest face to the huge, prominent snow shelf that projects from the mountain at about 24,000 feet, and that from there a route might continue up over steep snow and rock to the summit. Although the

Kempe party was unable to solve the problems of the lower part of the icefall, despite courageous attempts, and although they never reached the upper icefall, the general route they projected, with one major change, was used by Dr. Charles Evans' splendid and successful party in 1955. Kempe's reconnaissance cannot be compared with Bauer's attempts on the northeast or Dr. Evans' attack on the south, but the fact remains that this lightly equipped and informal party made a major contribution to the ascent of the world's third highest mountain. ROBERT H. BATES

High Adventure, by Edmund Hillary. 256 pages with 31 plates, 10 maps and drawings, and pen sketches by G. Djurkovic. New York: E. P. Dutton and Co., 1955. Price, $4.50.

For decades adventure-minded readers have vicariously lived the struggles of great Himalayan climbers of the pre-war era. To the mountaineer, names such as Mallory, Shipton, Tilman, and Bauer are as familiar as that of his own climbing companion. In the post-war years a new generation of climbers has found adventure in the Himalaya no less dramatic than before. Time alone will decide which of these men has etched a permanent mark in the history of Himalayan exploration, but several names already stand out. There seems little doubt but that Sir Edmund Hillary will continue to lead the list of great climbers. His accomplishment was unique; the one act alone, in climbing to the highest point on earth, assures him of immortality.

Hillary saw considerably more of the Himalaya than the Western Cwm and summit of Everest. In "High Adventure" he has given us a highly personalized account of his adventures in the Himalaya, leading ultimately to the successful ascent of Mount Everest in 1953. His 'teen-age interest in climbing, difficult climbs in New Zealand and the Alps, and his first trip into the Himalaya are dismissed in the first 20 pages, perhaps rightly so in view of what follows. Hillary's first exposure to the Himalaya in the spring of 1950 led quickly to a second in the fall of the same year when Eric Shipton invited him to join the reconnaissance of the southern route on Mount Everest. Here he settles down to a detailed personal account that ends two years and 10 chapters later staggering down from the South Col after the harrowing descent from Everest's summit.

Following the reconnaissance, the Swiss attempt on Mount Everest delayed the British a year, but the time was well spent, though in some anxiety, Hillary admits, lest the Swiss succeed. Again accompanying Eric Shipton, Hillary attempted Cho Oyu, and when turned back at 21,000 feet

by ice barriers, he devoted the rest of the season to exploring whole new areas of the Himalaya. In one season he made the first, and a very difficult, crossing of the Nup La, visited the sites of the early Mount Everest expeditions on the Rongbuk Glaciers, crossed from Namche Bazar to the Barun Valley, where the southern approach to Makalu was examined for the first time, and climbed, en route, a score of peaks.

More than half the book is devoted to the climb of Mount Everest. As a first-hand account by the man who did it, the book obviously is unique and essential reading for anyone even remotely interested in adventure, Himalayan or otherwise. Aided by the long and dramatic history of the mountain together with its prestige as the highest, the story of final success is compelling reading. As a man of action Hillary writes candidly and with elemental directness about the things he sees and does. There is hardly time or inclination for introspection and artful description, yet the straight-from-the-shoulder narrative convincingly carries the reader through many a storm, up many a steep ice slope, and across, sometimes into, some of the best crevasses in the Himalaya. WILLIAM SIRI

Tiger of the Snows. The Autobiography of Tenzing of Everest with James Ramsey Ullman. 294 pages, 26 illustrations, 5 maps and sketches. New York: G. P. Putnam's Sons, 1955. Price $4.50.

This is a remarkable book. Mr. Ullman has succeeded in seeing the mountains and life among them through the eyes of Tenzing. The result is a fascinating revelation of a way of life and thought far remote from ours, which can give us much to think about in comparison with our own lives and ideals.

The book begins with Tenzing's memories of his childhood in Sola Khombu, before either Western or Hindu influences had penetrated that cloistered land, recounts his early love of the mountains and particularly of Mount Everest, and his painful efforts to qualify as a high altitude porter so that he might reach the great summits.

There are brief accounts of his many climbs and some interesting (and charitable) opinions of the European climbers by whom he was employed, and a simple and delightful account of the Great Ascent of Everest itself. Then follows the story of the party's return to civilization and the simple and straightforward way in which Tenzing avoided being used as a pawn in the political game between India and Britain. In this reviewer's opinion this book should have a place in every mountaineering library.

OSCAR R. HOUSTON

Eye on Everest; A Sketch Book from the Great Everest Expedition, by Charles Evans. 123 pages of black and white sketches with brief explanatory notes. London: Dennis Dobson, Ltd. Price 12s. 6d.

Everest has been climbed only once actually, but it seems at the present time that we will be allowed to climb it vicariously many times. One of the more recent opportunities comes in Dr. Evans' sketch book. In attitude his efforts are more a supplement to Wilfred Noyce's book, *South Col,* than to Sir John Hunt's treatise on mountaineering. He does not attempt "to tell a full consecutive story," but rather to note the high points and give his personal impressions, pictorially.

His view is a unique one. The sketches are not so true as a photograph, but are more immediately understandable. There is humor, and pride, and dignity in these drawings, qualities hard to capture in a camera's lens, and they have a professional polish. Another aspect of this book which pleased me was the quality that let me feel that this was familiar, and at the same time exotically new. This feeling of intimacy is rare in expedition literature.

As the book cover makes immediately apparent, Charles Evans sees things in his own way, but the subtlety here is that there is no distortion or falsehood, but merely a removal of superfluous details and a cast given to the resulting portrait which is indicative of character and approach. This book gives the impression of a fine sense of humor and an alert grasp of essentials. It is certainly a necessary addition to the Everest shelf of the library.

DAVID A. SOWLES

The Abominable Snowman, by Ralph Izzard. 250 pages, 26 photographs. New York: Doubleday & Co., 1955. Price $4.00.

The Abominable Snowman (Yeti) has a warm place in my heart because of a story my son told me. Some years ago he and some Sherpa porters were traversing a great snow slope in the Karakoram, where he heard piercing shrieks high above—"a woman wailing for her demon lover." The Sherpas at once said: "It is a Yeti warning us to escape from this snow slope." They put on all speed and as they reached the safety of the rocks the snow slope came away behind them in a great avalanche.

Yetis also have their bad side as well as their good, according to the stories of the Sherpas.

It is quite natural that we should want to know more about this existent or imaginary man or animal, sometimes a giant, sometimes a pygmy, some-

times beneficent, sometimes horrific, unseen by man—at least by any man who survived—living where nothing else can live and known only by tracks which may run forward or backward, and which, when followed, have led nowhere.

Mr. Izzard set out to find the facts. Under the auspices of the Daily Mail, he organized a full dress expedition, of nine members and nearly 300 porters, and spent four months, February to May, in and around Namche Bazar, and the area about Everest. The accomplishments? He saw many tracks which the Sherpas identified as Yeti tracks, accumulated many more stories (often contradictory) and saw two fur ceremonial caps, said to be 300-year-old Yeti scalps.

It is a merry book, full of humanity and may be recommended for a pleasant evening's reading.

It is open to two criticisms: the two pictures of Yeti tracks are worthless, which is surprising as the expedition included a professional photographer and two assistants. There is no map, so it is impossible to understand the topography or follow the route unless one is personally familiar with the country or has access to a map in some other book.

OSCAR R. HOUSTON

The Sherpa and the Snowman, by Chas. Stonor, with a foreword by Sir John Hunt. 206 pages, 38 pictures. Hollis & Carter: London, 1955. Price, 18 s.

To those serious students of the Himalayan mystery this book may not contain much that is new. Many of us have regarded reports about the Yeti (as the Sherpas call it) as not very subtle spoofing. Even the appellation "Abominable Snowman" suggests an attempt to be other than serious. However, the Tibetan name "Metoh Kangmi" literally translates as "a repellent manlike creature whose home lies in the higher snow ranges"; hence the popular name is really not an effort to be funny.

In the winter of 1953/4 an expedition was sent from London to investigate the abominable gentleman in his own stamping ground which fringes and overlaps the habitat of the Sherpas on the approaches to Everest. It is in the environs of the Sherpa villages and above their yak grazing alplands that the Yeti has most often been reported. The author is a biologist and anthropologist, the party included a zoologist, a doctor and an American naturalist-traveler. Their approach to the verification or disproval of the snowman seems at all times to have been open-minded and scientifically sound. As one who was a complete skeptic, this reviewer underwent a

growing fascination as the investigation unfolded. Tracks were found and photographed, excreta analyzed, the eye and ear witnesses cross examined and cross checked. There is no question in the Sherpa mind about the existence of the Yeti, and the expedition itself concludes with the conviction that some unknown and highly intelligent form of ape maintains an elusive and precarious foothold in the Alpine zone of the Himalayas.

The foregoing is, however, only a part of the book's worth. There is no excitement, no climax; the book at times plods along at a gentle pace enlivened now and then by restrained humor as when the scientist and the monk-doctor compare medical notes and their competing cures for migraine to malaria. This book obviously was written by a sincere lover of nature and humanity. The bases of the Sherpas' economic, spiritual and social life are vividly depicted, as well as (to this reader) some startling items such as the flight of yellow billed chough that are seen airborne at 26,000 feet.

Those who have an interest in the Himalaya for climbing or any other reason should add this book to their libraries. They will find here intelligent and objective observation, honest and competent writing.

LAWRENCE G. COVENEY

Land der Namenlosen Berge, by Dr. Herbert Tichy. 221 pages, 33 photographs, including 4 in color, 4 sketch maps. Vienna: Ullstein and Company, 1954.

Motivated more by a desire for exploration and its wider variety of adventure than for climbing peaks *per se,* Tichy shows himself amply capable for solitary travel through the nameless peaks of western Nepal. From Kathmandu, he follows (in the autumn of 1953) Tilman's 1950 route to the headwaters of the Marsyandi, but soon enters a region previously unvisited by European explorers. Accompanied by three Sherpa companions, Adjiba, Gyalsen, and the experienced Sirdar Pasang, he visits the Sisne, Saipal, and Mustangbhot ranges, near the border of Tibet. They climb a number of peaks over 5,000 meters, and turn back on a few more without excuses or misgivings.

Tichy presents a colorful, intimate interview with the people of Nepal who are observed by his understanding eyes. He writes simply, with humor and warmth: a very pleasant, though rare combination. Like Tilman, Tichy is the solitary wanderer who travels with a light commissary, but with a strong stomach. Mountaineering literature is richer because of this man.

ALLEN STECK

East of Katmandu, by Thomas Weir. 138 pages, 91 illustrations. Oliver and Boyd: Edinburgh and London, 1955. Price, 16 s.

Small Himalayan Expeditions are becoming more and more feasible. Thomas Weir and his Scottish companions have played a great part in advertising the pleasures of such an expedition.

In *East of Katmandu* Mr. Weir again puts his case. Despite the irritations that they encountered in Indian Customs and in quibbling porters, they experienced all the pleasures of exploring relatively unknown passes, climbing peaks that do not demand an organized siege, watching the beautiful country with its flowers and birds unfold before them, and sharing their experiences with the Sherpas in the latter's picturesque homeland.

The majority of the book is the description of the travel through the country and the incidental situations that occur. There are the sick men in the villages who come for medical aid, and the experience of being wined and dined in native houses. Watching the religious ceremonies of a strange people for their sick or for a sacrifice is part of the everyday life of this Scottish party, as are the visits to the monasteries en route. Mr. Weir lets us feel the excitement of each ridge crossed, each corner turned, and in the same paragraph shows us the fascination that the bird life of the area held for him, and which is one of the intriguing features of this countryside.

There is some good mountaineering also. Not spectacular, but the kind that draws most men to the mountains—a climb difficult enough to have some spice, with a rewarding view of the really great mountains of the world. For those who dream of exploring and climbing in distant places, this book should be a pleasant discovery and a worthwhile afternoon's reading. One might just go to Nepal after reading it.

HENRY S. FRANCIS, JR.

Road to Rakaposhi, by George Band; with Chapters Two and Five by Ted Wrangham and Chapter Seven by George Band and Roger Chorley. Also two appendices by David Fisher. 192 pages, 47 photographs, 4 maps. London: Hodder & Stoughton, 1955. Price, 16 s.

This is an excellent book. In fact its excellencies are so many that I shall be able to mention only a few. In short, I recommend it as I would very few books on mountaineering, or any subject.

The title is an insight to the book. It is the story of the whole trip—the *Road*—to the mountain called Rakaposhi, in the state of Hunza, Pakistan. Significantly, only 55 pages are devoted to the actual climbing account. The author, George Band of Everest and Kangchenjunga, and his

associates, have realized that their preparation, their experiences in reaching Pakistan, their visits to Hunza, Baltit, and Nagir, and the people of these states are the necessary backdrop to their mountain, the atmosphere which gives their day *on* the mountain life and value.

As a result of this awareness, the excellent appendices, and generally an attitude of unselfish helpfulness—which Eric Shipton expresses in his foreword: ". . . content that others should use their discoveries to attain the success which, with a little more luck with the weather, might well have been theirs."—this book could be used as a handbook for small expeditions to the Himalaya. The pleasure of this book is partly in that, and partly in the assurance—particularly comforting to this reviewer—that the small expedition is still possible and the finest way to climb and enjoy big mountains.

All in all, this is an engrossing and stimulating book. Its basic value is stated by Shipton in the completion of the above quotation: "At a time when competition and international rivalry seem to threaten the values and long established traditions of mountaineering, it is most encouraging to find this spirit still so very much alive." In ending this review I might add two facts: one, Rakaposhi (25,550 feet), is still unclimbed and just three days march from an airport; two, I profoundly wish that I had been on this trip.

DAVID A. SOWLES

A History of British Mountaineering, by R. L. G. Irving. 240 pages, with 65 illustrations. London: B. T. Batsford, Ltd., 1955. Price, 25 s.

There are few places in the world where British have not climbed, and this is becoming true of other nationals as well. The evident difficulty in such a work, therefore, is to know what to leave out. Thomas Johnson, who botanized in Wales and ascended Snowdon in 1639, could not have imagined that he would be set down at the start of British achievement in this field, and a generation ago there was no certainty that Everest could be climbed.

In recent years the pioneer work of the Alpine Club founders has been overshadowed by expeditions beyond the Alps, so that the time is ripe for this book. The early chapters deal with Chamonix and Zermatt, and for the necessary background one finds brief mention of early climbers, such as Mlle. d'Angeville, who were not British at all, and this, except to the historian, is a bit confusing. In the Bernese Oberland we learn of the attempt to storm the Jungfrau from Rotthal which Slade and Yeats Brown made in 1828.

J. D. Forbes forms the chief link between Saussure and the founders of the Alpine Club. It was the small dinner at the Leasowes, home of William Mathews, Sr., on November 6, 1857, at which the project was discussed, and the first meeting of the club took place on December 22. The proposed rule that "a candidate shall not be eligible unless he shall have ascended to the top of a mountain 13,000 feet in height," was objected to by Albert Smith and others, and was rejected. No one conceived that the organization "would be the parent of fruitful children, some of them more prolific than itself." John Ball was the first president. *Peaks, Passes and Glaciers* was succeeded by the *Alpine Journal*. The books of Wills, Hinchliff, and Hudson and Kennedy did much to increase interest in mountaineering.

Zermatt had become the fashionable center as the popularity of Chamonix declined. Monte Rosa was the objective, soon to be eclipsed by the Matterhorn and its tragedy. And so the quickening enthusiasm spread to more distant terrain: the Caucasus, North America, the Southern Hemisphere, the Himalaya. Anglo-Saxon climbers at least, will be in agreement with the author's creed "that there is an influence more purifying than danger in the beauty of the snows; and that among the countless ridges and recesses of the Alps we shall find an outlet for the energies of youth without having constantly before our eyes immediate prospects of dissolution."

J. MONROE THORINGTON

Commando Climber, by Mike Banks. 240 pages, 18 photos, sketches. London: J. M. Dent & Sons Ltd., 1955. Price, 18 s.

The author is a captain of the Royal Marines who served with the 3rd Commando Brigade in Burma during the last war, and then returned to England and became a climbing instructor on the Cornish sea cliffs. His stories are not of his wartime service but rather of his experiences training men to ascend the very steep and difficult cliffs, his climbing excursions to Scotland and Cyprus, service on Malta, and enterprising exploratory tours in Greenland. He is particularly successful in taking the reader with him on these latter journeys, and he makes that northern land seem most intriguing.

The book concludes with a description of a moonlight ascent of Route Major on the Brenva face of Mont Blanc, obviously something of a feat. Nevertheless, it leaves one with the feeling that the author's main interest is in difficult rock climbing problems rather than in general mountaineering. Although without very much continuity, and therefore suitable for bedtime, it makes pleasant reading.

JOHN C. OBERLIN

Zermatt and the Valais, by Sir Arnold Lunn. 202 pages of text, 9 black & white photographs and index. London: Hollis & Carter, 1955. Price, 12s 6d.

Imagine yourself, a newcomer to the Alps, taking the little red train from Visp to Zermatt. Wouldn't it be wonderful to find yourself sitting next to someone who knew the region and loved it well, who pointed out the great peaks to you as they came into view and told you delightful tales of each little village and of the men who made history in those peerless hills? Lucky you!

Arnold Lunn's *Zermatt and the Valais* is just that: a trip through the Valais in the best of company. To one to whom these valleys are new, this little book should be a real help in getting acquainted. For those of us who know and dearly love them, it will serve to recall happy days and to remind us warmly of the author, to whom the mountain sports owe so much.

ELIZABETH S. COWLES

Mont Blanc and the Aiguilles, by C. Douglas Milner. 176 pages with frontispiece in color. 70 illustrations by the author, 4 map diagrams, bibliography and index. London: Robert Hale, Ltd., 1955. Price 30 s.

This is the first book in English dealing with the chain of Mont Blanc as a whole since the publication of Mathews' *Annals* more than 50 years ago. The author is internationally known for his mountain photography, and the present work with its interesting text, emerges with a curious tridimensional quality, as if one were studying a relief map. This will be evident to anyone consulting the concluding chapters on Practical Recommendations and Centres and Selected Expeditions.

The early chapters deal with the pioneer journeys to Chamonix of Pococke, Windham and Martel, and the subsequent visits of de Saussure and his contemporaries, leading to the explorations and ascent of Mont Blanc itself. The early ascents are dealt with, and the impetus given to the knowledge of mountains by Forbes and Ruskin is discussed. The Chamonix and Courmayeur guides, as well as the tariffs, come under analysis, while three chapters cover climbing to modern times: The Ice Age (1855-1875), The Stone Age (1875-1914), and The Iron Age (1919-1955).

The first mention of Mont Blanc by name, however, as Paul Payot has shown, is by Francois de Sales in a document of 1603, and not, as Mr. Milner states, by Martel in 1742.

J. MONROE THORINGTON

Cimes et Visages du Haut Dauphiné, by Felix Germain. 185 pages, including 110 photographs in black and white, 16 in color, and 17 vignettes, one map and a circular panorama with key. Paris: Arthaud, 1955.

An excellent picture-book of Dauphiné, with appropriate text, this volume (24th in the series "Belles Pages, Belles Couleurs") presents a cross section of an area that has been almost neglected by American mountaineers. Almost two-thirds of the pictures deal with high-level mountaineering or skiing, but the valley scenery, peasant life, villages and flowers are amply included. It is a more barren area than one finds in the chain of Mont Blanc, but no one can deny the majesty of its peaks as shown in the magnificent views of La Meije and Les Ecrins. The color-plates are unusually good, but the explanatory text of the illustrations (because of their bled edges) is in the back of the book, making it awkward for reference.

J. MONROE THORINGTON

The Mountains of Ireland, by D. D. C. Pochin Mould. 156 pages, 48 photographs and 1 map. London: B. T. Batsford, Ltd., 1955. Price, 21 s.

Climbers who insist on having their mountains lofty and glacier-hung will view the subject of this book with a scornful eye. Webster's bald definition, "Any part of a land mass which projects conspicuously above its surroundings," would satisfy few mountain lovers, who each has his own more subtle interpretation of "mountain." We know that there is a character, independent of elevation, to be found in true mountains, an essence, not to be constrained, that speaks to every mountaineer. Though of these Irish summits the highest is but 3,414 feet, and many are below 2,000, it is clear from text and pictures that here is real mountain country, wild, striking, and varied.

Around the rim of the island rise these eight mountain groups, diverse in formation and verdure but alike in their nearness to the sea. Here is some rock-climbing and much fine tramping terrain, though the old forests are largely gone, and bare rock or flowered turf form the track. Their story is told with insight and enthusiasm by a climber who is also geologist and archeologist. An unusual feature of these regions is the frequency of relics of man: Megalithic cairns, prehistoric forts, Celtic church sites, and reminders of the troubled times of Ireland. This history is vividly woven into the tale of the modern landscape.

A study of the numerous photographs shows a striking similarity to the New England scene; almost every view has its local counterpart—it may be in the Berkshires, the White or Green Mountains, or the Camden hills.

But the story proves this likeness to be illusory. The differences appear not only in the lower elevations, but more saliently in the cultivation of the valleys, man's marks on the heights, the pervading presence of the sea, the types and profusion of flowers, and especially in the absence of forest cover. The place names are strange and meaningful (some clue to their pronunciation would have pleased the American reader).

By no means a stark guidebook, *The Mountains of Ireland* is, nevertheless, informative as well as pictorially graphic. The author knows all phases of her subject. Her general descriptions of history and location are supplemented by accounts of actual trips she has made over the highlands during which an observant and appreciative eye has noted details of route and beauties of scene for a skilled pen to record. Aided by the map showing the whereabouts of the several groups—clear but on too small a scale for trails or roads—it would be no difficult matter to retrace her steps, and surely a delightful one.

On completing this book, the reader will be convinced that Ireland's mountains present a convenient region, unfrequented and full of charm, most rewarding to visit, not, perhaps, when one is full of vigor and ambition, but for the times when leisurely hill tramping seems an appealing recreation. MARJORIE HURD

Leuchtende Berge. A book of colored photographs of the Alps, by Jos. Jul. Schaetz. 72 pages, 28 colored photographs. Munich: F. Bruckmann, 1954.

This is a very fine collection of colored photographs of the Alps by the writer and others. The pictures are imaginative and beautifully reproduced. They range from studies of flowers, waterfalls, peaceful lakes and mountain valleys, to excellent pictures of high peaks, glaciers and rock faces. "Suitable" captions accompany many of them, and Schaetz has written a short preface about mountaineering enthusiasts from Petrarch to the skiers and mountaineers of the present day. URSULA CORNING

High Sierra Country, by Oscar Lewis. 291 pages, map end-papers. Duell, Sloan and Pearce, New York; Little, Brown and Company, Boston, Toronto, 1954. Price $3.50.

A glance at the title would lead one to believe that this book is about the alpine regions and high peaks of the country's greatest single mountain range. But actually, the mountains themselves serve largely as a backdrop for man's kaleidoscopic activities. Being the twenty-seventh volume of the

well-known "American Folkways" series, it concentrates on the human story of California's Sierra Nevada, from its discovery by the Spaniards to the present day. However, Mr. Lewis has not written an exhaustive, chronological history of the range, but rather has selected highlights which he considers interesting and significant. The effect is the Sierra done "once over, lightly," and as such is a lively and entertaining account.

After a short introductory description of the region, the author takes up the various phases of its history. There are chapters on explorers, early travelers, Yosemite Valley, stagecoaching, the Central Pacific Railroad, gold mining camps, and various odds and ends, including literary lights, highway robbery, Big Trees, tall tales and folklore. This amazing conglomeration of men and events is successfully handled by topical subchapters, rather than a continuous narrative. Most of the action takes place in the foothills and middle altitudes; only once does Mr. Lewis conduct his readers above timberline. This is with Clarence King in his attempts to climb Mount Whitney in 1871 and his final success two years later. The map end-papers, although decorative, are too small scale to show the locations of many places mentioned in the text.

Mr. Lewis is an accomplished and experienced historical writer, and it is unfortunate that his manuscript was not checked more thoroughly before printing. For example, there is a confusion between Echo Summit, over which ran the Sierra's most traveled stage road, and the much higher Carson Pass, to the south. Credit for the "discovery" of Yosemite Valley should be given to William Penn Abrams in 1849, not members of the Mariposa Battalion two years later. We are somewhat startled to read that surveyors running California's eastern boundary "followed down the 39th parallel from the Oregon border" to "the spot where that parallel intersected the 120th meridian." There are some 70 groves of Big Trees, instead of 25. The famous organization headed by Whitney was the California State Geological Survey, not Geographical Survey. The Sierra Club was founded in 1892 instead of 1890, and Yosemite National Park contains approximately 1,200 square miles, not 12,000. But these and other slips do not mar the scope and sweep of Mr. Lewis's story.

More surprising, however, is his approval of the dam at Hetch Hetchy, which converts a valley almost as beautiful as Yosemite into a reservoir of the San Francisco water system. In a sub-chapter, "The 'Rape' of Hetch Hetchy," we read: "Moreover, it presently grew clear that the dire results opponents of the [dam] measure had foreseen had not come to pass. For the transformation of Hetch Hetchy Canyon into a mountain lake did not materially lessen the scenic attractions of the region; indeed, in the opinion

of many, it served rather to enhance them." Obviously Mr. Lewis cannot have visited this dreary man-made lake with its desolate mud-caked shores at low water.

However, every writer is entitled to his opinions, and slips are inevitable until electronic brains take over human affairs. Up to that time *High Sierra Country* will probably be one of the most readable accounts ever written about man's activities on the slopes of our mightiest mountain range.

WELDON F. HEALD

The Men and the Mountain: Frémont's Fourth Expedition, by William Brandon. 337 pages with 3 sketch maps. New York: William Morrow and Company, 1955. Price $5.00.

This account of Frémont's fourth expedition in 1848 records the strong-willed but futile attempt to cross the Colorado Rockies in one of the hardest winters known in the mountain country. Frémont's purpose was twofold: first, to complete surveys of previous expeditions and to examine a possible central route for the transcontinental railroad; and secondly, to vindicate himself from the seemingly unjust court martial which spelled an end to a colorful and promising army career at the age of thirty-five. Here, in Mr. Brandon's book, is the story of a heroic and romantic visionary dedicated to success above all else. The events of the expedition are vividly described, and its members credibly humanized in their historical and tragic role. The story is straightforward, its purpose clear: to give a suitable background to the expedition, and then recount the month-long struggle of 36 men against winter in Colorado's San Luis valley and San Juan range, followed by the equally long retreat to Taos of the 26 survivors.

Unfortunately, the mountains are important only because of the accidental role they play in creating disaster for Frémont. The mountains were merely stumbling blocks, to be crossed the best way possible. There is no basic interest in them. *The Men and the Mountain* is, therefore, of value for historical rather than mountaineering reasons. For the ardent scaler of peaks, the book may be of little interest, simply because there is only a general, rather brief description of the mountains, and none of them is climbed. Yet many a mountaineer, who knows the true nature of the adventurous spirit, will appreciate this brief encounter with the Continental Divide, which presented a truly rugged barrier to the movement West.

FREDERICK O. JOHNSON

The Untrodden Andes, by C. G. Egeler and T. de Booy. Foreword by Sir Edmund Hillary. Translated from the Dutch by W. E. James. 203

pages, 51 photographs, 9 maps and sketches. London: Faber and Faber Ltd., 1954. Price, 25 s.

Egeler and de Booy have climbed together in the Alps. Together they dreamed, as they learned to climb, of a journey to a distant land and a great untrodden mountain. The dream unfolded as they formed a Dutch geological expedition to Peru, and it was fulfilled when with Lionel Terray they reached the summit of Nevado Huantsan.

The ascent of Huantsan was not an easy one, and considering the difficulties of the mountain it was quite a feat for such a small party. The authors state that their success was largely due to Terray's skill and drive. Luck also played a part when de Booy fell 300 feet and stopped unhurt. Storms battered them; routes did not work out, and it was not until the third assault that they were successful. All in all it was a pretty exciting show.

The authors have chronicled their experiences well, both in words and photographs. The story of this expedition will hold your interest throughout, from its humble beginnings in Holland to its triumphant conclusion in Peru.

RICHARD K. IRVIN

Du Kenya au Kilimanjaro, by Roland Truffaut. 251 pages, 2 maps, 2 sketches, 16 pages illustrations. Paris: Rene Julliard, 1953. Price bound, Fr. Fcs. 1090.

This little book is the story of the small French expedition of 1952, which visited Africa and climbed both Kenya and Kilimanjaro. Of the party of eight, two members, Maurice Martin and Roger Rangaux, succeeded in making the first ascent of the north face of Batian, the highest point of Kenya Mountain, under difficult conditions. The story of this ascent is the highlight of the book, although it occupies but little of the total account.

The party apparently had a very good time aside from the disappointing weather conditions on the mountain itself, and much of the space in the book is devoted to the approach and return, the trip to Kilimanjaro, and the wild life encountered. From the standpoint of the climber the most interesting part of the book is the chapter devoted to the 10 days spent at the upper end of the Mackinder Valley. Several attempts to force a route up the north face were shattered by the daily afternoon storms. In fact, it was only after the party had been scheduled to leave that one more attempt was made, by two instead of the four originally intended, and the climb finally completed. The account of the climb itself is written largely from the point of view of the onlookers. The ascent of Kilimanjaro, afterwards,

comes somewhat in the nature of an anticlimax and was quite obviously made to complete the record and bring home a 6,000-er.

Although the author gives a quite complete list of the ascents of the various summits of Kenya, which would indicate a familiarity with the literature, his lack of knowledge of English causes him to make many errors in spelling throughout the work. The text is well-leaded with good margins, but a better grade of paper would have improved the appearance of the book. The pictures, although well reproduced, are small with three or four to a page. This is a very readable account of a pleasant trip and an outstanding climb.

K. A. HENDERSON

The Mountains of New Zealand, by Rodney Hewitt and Mavis Davidson. 128 pages, with 136 photographs and 2 maps. Wellington, New Zealand: A. H. & A. W. Reed, 1954. Price, 18s 6d.

Unfortunately, the American mountaineer has had too little contact with New Zealand, one of the world's most mountainous countries. Few Americans have climbed there, and it has been difficult to learn about its mountains from any one reading source, owing to the limited number of books available on the subject. But now, in this single, relatively short and inexpensive volume, one may be fully introduced to the amazingly large number of mountains "down under."

In their broad survey the authors have provided a readable, profusely illustrated account of the ranges, peaks, valleys, and flora and fauna of North and South Islands. The coverage of peaks is most extensive, although details of the guide-book variety must necessarily be lacking in so short a space. More thorough indexing of peaks rather than ranges only, would be of help to the reader. The photographs, though not of the best quality in every instance, nevertheless give a fine impression of the varied mountain landscape. This contribution from two of the country's veteran mountaineers will surely attract many appreciative readers, to whom the mountains of New Zealand will now seem much less remote.

FREDERICK O. JOHNSON

In Memoriam

CALEB FRANK GATES, JR.

1904-1955

Caleb Gates was born in Istanbul, where his father was president of Robert College. He attended Princeton and Balliol College, Oxford, and in 1927-1928 was president of the Oxford University Mountaineering Club. He taught history at Robert College and later at Princeton, where he also became assistant dean of students. In 1941 he became chancellor of Denver University. He served in Army intelligence in Europe during the war. Returning to Denver he resigned as chancellor, but continued as professor of history until 1949, after which he had a long illness. His first marriage, by which there were three children, ended in divorce. He had married again a few months before his death in California.

His climbing was done mostly between 1925 and 1930, principally in the Alps, where he made about 50 ascents, generally guideless after the first two years. He was considered a good climber at that time, and was a member of the Alpine Club (London) as well as of our own club from 1928 until his death. H. S. H., Jr.

ARTHUR PAUL HARPER

1865-1955

On May 30, 1955, there died at Wellington, New Zealand, in his ninetieth year, our honorary member Arthur P. Harper[1] and the last surviving founder of the New Zealand Alpine Club. The inaugural meeting of the latter Club on March 11, 1891, was called by a notice signed by G. E. Mannering and A. P. Harper, and it elected Harper as the first secretary and treasurer. His father, Leonard Harper, was appointed the first president.

Young Arthur, on an early visit to England, was sent for six months to Dr. Parry's school at Stoke Poges, where he records (in "Memories of Mountains and Men"—a most readable book, published in 1946) he was a fellow-pupil of Benjamin Disraeli, a nephew of Lord Beaconsfield, whom he encountered when on a visit to the school. He also had the remarkable experience of suffering punishment from his headmaster for untruthfulness in maintaining that he did *not* come from Australia, but from New Zealand, when to his "betters" New Zealand was definitely part of Australia!

[1]See photographs in *A.A.J.* 1952, opp. pg. 382 and *A.A.J.* 1953, opp. pg. 577.

On his return to New Zealand he was sent to Christ's College, Christchurch, and later very appropriately went "Home" to enter Christ Church, Oxford, where he took his degree in 1887. He was called to the Bar in 1888, having entered the Inner Temple. It was at this time that Harper had his first introduction to the Swiss Alps, and, moreover, had the opportunity in England of meeting many members of the Alpine Club, to which he was elected in 1892. These were the important formative years of his life, and Harper was always eloquent of the influence the leaders of the "A.C." had had upon him at that time.

His return to his own country in 1893 was marked by a grievous family tragedy, which drove him from the practice of the law to commence perhaps the most outstanding period of his career, in exploratory survey of the difficult mountain and forested country of Westland, as assistant to the great pioneer and surveyor Charles E. Douglas. Here for three years of the most arduous work in steep and virgin country of an exceptionally intransigent character, he made his great contribution to mountaineering in New Zealand. As is stated in the preface of his classical and inimitable book, published in 1896: "Pioneer Work in the Alps of New Zealand," Harper could have justifiable pride in saying: "I do not pretend to have made many high ascents, but base my claim to be considered an authority on the Alps of New Zealand on the fact that I have shared in the first exploration of nearly every glacier in the central position of these mountains." It is gratifying to know that to this classic work of Harper's will shortly be added a volume of the diaries of the late Charles Douglas, to be edited by Mr. John Pascoe, and for which Harper himself, shortly before his death, wrote a Foreword of some 6,000 words: indeed, as Mr. Pascoe has cited in a letter to me, a veritable "memorial to Harper as well as to Douglas and their 'golden age'."

Harper's earlier survey-work along the western flank of the Southern Alps aroused a keen interest in the glaciers and their variations. Somewhere about 1895, he has cited in "Memories of Mountains and Men," he was invited to become a member of the International Commission on Glaciers, which was later superseded by the International Commission on Snow and Ice. He remained a member of these important bodies until the end, and his interest in New Zealand glaciers was unabated: especially the spectacular Franz Josef Glacier, whose rate of movement he had measured, and shown in one section above Cape Defiance, to be as high as 14 or more feet a day, and whose periodic pulsations or "waves," which induce abrupt alternate advances and retreats in its terminal front, have made it an ice-

stream of particular interest. Incidentally, the above figure was not claimed to refer to the speed of the whole body of the glacier whose central portion (opposite Cape Defiance) has in recent years shown a rate of movement from five to five and one-half feet per day.

The long story of Harper's relationships with the New Zealand Alpine Club, which he had helped to found, and which incidentally went into recess during the years 1896-1914, cannot be recounted here: details of this story can be gleaned from the earlier numbers of the New Zealand Alpine Journal, and especially the 1955 number containing his obituary. In England Harper had been imbued by the customs and the constitution of the "A.C.," and for many years he would admit no other model could be more suitable for New Zealand. Moreover, for long he had little regard for the many mountain and "tramping" clubs that continued to spring up all over New Zealand. However, Harper was wise enough subsequently to take a more moderate view, and in 1930 he assumed the leading part in the formation of the Federated Mountain Clubs of New Zealand. He was president of the N.Z.A.C. at this time (his whole period of office was from 1914 to 1932, and again in 1941 for the Jubilee year of the Club), and the chief advantage of the Federation he deemed to be the greater ability provided by weight of numbers in approaches to the Government on the unsatisfactory position of its policy in the licensing of alpine guides. That again is rather a lengthy story; but to the end Harper rightly disputed, as have the vast majority of mountaineers, the wisdom of the Government's policy in the control of guides, especially the anomaly that even the Chief Guide in New Zealand is under the direction of the local Government Hotel manager, who himself is ignorant of mountain-craft. To the end Harper was fighting this issue, his first objective being to get the guides' administration transferred from the Government Tourist Department to the National Park Authority or Board. That a Board to administer the Mt. Cook National Park has lately been appointed, with good representation of alpine interests, is most gratifying to those of us who have endeavoured to support him in this issue. It is in a sense sad that he did not live to witness and finally participate in this achievement for which as a first step he had striven.

Harper was a man of many interests, and his vitality and industry to the end were remarkable: indeed an example to many far his junior. He undertook his last big mountain excursion when he was 65 years old. On that occasion he led a party from the Hermitage over a pass at the head of the Mueller Glacier and down the Karangarua River, which he had explored 37 years earlier from the Westland side. In his middle seventies he

climbed Hector's Col (or Matukituki Saddle) in the Mt. Aspiring district, and when 86 attended the opening of the highest hut (N.Z.A.C.) on Mount Ruapehu. In 1948, at the age of 82, he became President of the Forest and Bird Protection Society of New Zealand, and he held that office until his death. Apart from membership of the National Park Authority (which preceded the Board), for 21 years he had served on the New Zealand Geographic Board, latterly as representative of the Federated Mountain Clubs. In 1952 he was awarded the "C.B.E." for long services to exploration, mountaineering, the preservation of native fauna and flora and other public benefits. He appreciated enormously the Honorary Membership of the Alpine Club, which he was accorded in 1932, the year indeed that the N.Z.A.C. elected "A.P.H." (as he was always known) to Life Membership. Harper was proud, too, to be Honorary Member of the American Alpine Club. He came of a distinguished English and New Zealand Church family: his grandfather, the Most Rev. H. J. C. Harper, D.D., being in his time Bishop of Christchurch and Primate of N. Z., whilst his uncle, the Very Rev. Walter Harper, was later Dean of Christchurch, and a Fellow of Christ's College (N. Z.). In 1899 "A.P.H." married Marion Florence Campbell of Christchurch: there were two sons and two daughters of the marriage, of whom one son, Leonard Hugh Acland, was killed in World War II, when serving with the R.A.F.

It was in 1923 that I first met Harper in London. He was then on a business visit, and he hoped that my Company (the Anglo-Persian Oil Co., on whose geological staff I was serving) might become interested in New Zealand petroleum possibilities, and even the exploitation of "fossil" kauri gum in North Auckland (now Northland) where the industry was waning: he hoped, as I fervently wished, that I might be sent out to investigate these possibilities; but that plan never eventuated, and I did not see Harper again for 27 years, when I came to New Zealand early in 1950. Often since then have we met and discussed mountains and mountaineers, when he would reveal in his vivid and kindly way his long memories of them, and all that they each in their way, whether in New Zealand or Europe, had meant to him. More than once he confided in me that it was his ardent hope again to visit England in 1957, when he craved to be present at the centennial celebrations of the Alpine Club. What characteristic enthusiasm, what a continuing and youthful spirit! Many there are who will share the regret that "A.P.H." has not remained for that great occasion, but has passed on ahead to the Olympian Valhalla.

NOEL E. ODELL

MRS. JOSEPHINE DIEBITSCH PEARY

1863-1955

Mrs. Robert E. Peary, who died December 19 at the age of 92, was the last remaining original member of the American Alpine Club. Her passing reminds us of the dual interests that led to the formation of the Club in 1902: polar exploration as well as mountaineering.

Mrs. Peary's father was Professor Herman H. Diebitsch of the Smithsonian Institution in Washington. She married Peary, a young naval engineer, in 1888 and three years later accompanied him on the first of his several expeditions to the Arctic. Her expertness with the rifle helped to keep the expeditions in meat and furs. Many of the fur garments for her husband and other members she helped to make and keep in repair. She was associated with his expeditions of 1891, 1892, 1893, and 1894, and led the Peary Relief Expedition of 1900-1901 and 1902. In 1893 her daughter, nicknamed the "Snow Baby" by the Eskimos and now Mrs. Marie Ahnighto Stafford, was born only 900 miles from the North Pole. Admiral Peary (also an original member of the Club and Honorary from 1904) who finally reached the North Pole on April 6, 1909, died in 1920. He often said that it was his wife's constant inspiration and help that led to the success of his arctic expeditions.

H. S. H., Jr.

Proceedings of the Club

SECRETARY'S ANNUAL REPORT

3 December 1955

This past year has witnessed continued steady growth of the Club and very considerable mountaineering activity on the part of its members.

At the time of the last Annual Meeting the membership stood at 449 Active Members and a total of 454 including both Active and Honorary Members. Not including applications for membership approved by Council at its meeting of this date, our membership today comprises 470 Active Members and a total of 474 including both Active and Honorary Members. There has thus been a net increase of 19 members despite the loss of 3 members by death, 6 by resignation, and 3 dropped for non-payment of dues.

Since the report at the last Annual Meeting, the Club has lost by death the following: Maj. Gen. William W. Foster, December 2, 1954, and our Honorary Members Arthur P. Harper, May 30, 1955, and Prof. Jean Escarra, August 14, 1955.

Meetings of the Directors have been held in New York on February 5, in Philadelphia on May 14, in Barre, Massachusetts, on October 8, and in New York on December 3. There have also been two special meetings of the Club in Philadelphia on July 8 and October 21 to consider and take action on revision of the By-Laws and amendments to the Club's Articles of Incorporation. The Sierra Nevada Section (Richard C. Houston, Chairman), the Cascade Section (R. Duke Watson, Chairman), and the Rocky Mountain Section (Stephen H. Hart, Chairman) have been active and have held regular meetings. A series of informal meetings and teas has been held at the Clubhouse, with lectures illustrated with colored slides and movies. The exhibits in the American Alpine Museum have been arranged by Dr. Thorington and constitute a display unique on this continent.

The 1955 issue of the *American Alpine Journal* is again the largest yet published and is the most complete in each department the Club has ever produced. It represents the final achievement of Dr. Child as Editor; Mr. Farquhar has now undertaken this arduous responsibility.

The A.A.C. News has continued under the guidance of its first Editor, Miss Gest, and is gradually taking on the character of a national newspaper of mountaineering. There have been six issues published since the

last Annual Meeting and it may become necessary to increase both the size and number of the issues, such is its popularity.

The Safety Committee's report *Accidents in American Mountaineering* is unique in its field and represents a major contribution by the Club to the much-needed training of novice mountaineers. Lots of 500 copies were procured in 1955 by each of two other mountaineering organizations for use in their safety campaigns.

Miss Jean Chase has been employed as Assistant Secretary and the Officers have already found that they can rely upon her for smooth and efficient performance of the multitude of duties on which the day-to-day operation of the Club depends. Mrs. Hinds will shortly retire and in the meantime is attempting to complete the cataloging of all the more important material in the Club library. It will be difficult to provide for proper maintenance and cataloging of new acquisitions after she leaves. Fortunately, Mr. Neil continues to exhibit his ability in cabinet-making and similar fields while maintaining the Club's property in beautiful condition under the direction of the House Committee.

In order to modernize the Charter of the Club and to lay a better basis for expanded activities desired by the members, legal counsel was retained, amendments were drafted, two special meetings were held, and the necessary court proceedings gone through to achieve this end. Legal steps have also been taken in view of recent revision of New York law to secure abatement of the Clubhouse real estate tax and a very substantial reduction is already assured. These proceedings have required a great deal of close attention on the part of the President and Treasurer, and their successful conclusion places the Club in a much improved position.

Despite very efficient planning by the Summer Camp Committee, the Club's membership showed more interest in their own individual mountaineering projects, and there were insufficient advance registrations to justify going through with the project. Our members were active in Pakistan, Nepal (Lhotse), Peru (Cordillera Blanca), Africa, Japan, Alaska, Canada, Norway, and the Alps as well as in the United States. Notable first ascents include Mutch and Murphy's climb of Istor-o-Nal (24,242 feet); the Wishbone Arête of Mt. Robson by Claunch, Sherrick, and Firestone; Middle Howser Spire by Bernays, Austin, Jim McCarthy, and John Rupley; 16 first ascents in the Logan Mountains by Hendricks, Wexler, Bernays, Hubbard, and Ray D'Arcy; the North Peak of Nevado Pucahirca in the Cordillera Blanca of Peru by Kauffman and Clinch; three peaks of about 20,000 feet by the HMC 1955 Karakoram Expedition; and an 8,000-foot peak on Axel Heiberg Island by Fred Roots.

This is my last report as Secretary of the Club. Each year there has been no lack of interesting activities to transform an otherwise dry tabulation into a record it has been a pleasure to compile.

Respectfully submitted,

JOHN C. OBERLIN, *Secretary*

ANNUAL MEETING AND DINNER

Minutes of the 53d Annual Meeting of The American Alpine Club, held at the Clubhouse in New York on Saturday, December 3, 1955, at 2:00 P.M.

The President called the meeting to order. Some 50 members were present, with 120 members and guests attending the lectures following. It was

VOTED: To dispense with the reading of the Minutes of the last Annual Meeting which had been published in the *American Alpine Journal* and to accept them as published.

The Secretary read his Annual Report which was thereupon accepted by vote.

The Treasurer presented his annual Treasurer's Report which had been printed and previously circulated to the members and, after some discussion and explanation of details, it was

VOTED: To approve each item of expense during the past fiscal year as reported by the Treasurer in his Annual Report.

VOTED: To approve the retention to date of the investments shown in the Treasurer's Annual Report.

The President commented on the Auditing Committee's report and especially the recommendation that a formal annual audit be had and that officers be bonded. The Treasurer is to report to the Board of Directors regarding each of these points. The President also reported the success attained in securing substantial reduction in taxable assessed value of the Clubhouse with very greatly reduced real estate taxes in consequence. He confirmed the court approval of the Charter amendments to eliminate anachronisms and clarify the legal basis for the scope of the Club's functions and operations.

Upon motion duly made and seconded, it was

VOTED: To confirm all actions taken at prior Annual Meetings of the Club wherever held.

Mr. Coveney then made a brief report on the activities of the House Committee for the past year, stating that emphasis was being placed on a conservative policy to minimize expenses.

Miss Gest remarked that there would be an extra issue of the A.A.C. News in December and solicited items of general interest to the members.

Miss Reid reported for the Research Committee that expeditions can now obtain high-altitude oxygen equipment on a commercial basis.

Mr. Robert Bates reported viewing Austrian mountain and cold weather training and being much impressed by the equipment and techniques exhibited.

Mr. Carter quoted from a publication of the Austrian Alpine Club very high praise for the teamwork of the party comprising the Third American Karakoram Expedition.

Mr. Goldthwaite reported for the Conservation Committee that members had been active in liaison work and through other organizations but that the A.A.C. did not itself participate in propaganda efforts.

Mr. Brower described the success recently attained by the Sierra Club and associated groups in securing abandonment of the proposed Echo Park Dam in Dinosaur National Monument. An alternative location is to be proposed. He also reported that efforts are being made to publish the *A.A.J.* in May; a number of articles are in hand or promised.

Mr. Ferris reported for the Safety Committee that he has received word of 20 accidents during the past year, with six deaths. Investigation is being made of standard specifications for equipment with the especial aid and advice of Mr. Wexler.

It was

VOTED: To accept each of the foregoing reports with thanks.

Mr. Gilman introduced the new Assistant Secretary, Jean Chase, and Miss Corning reminded those present of the Annual Dinner.

Mr. Kingman commented on the services of the Club's officers for the past three years and, upon motion duly made and seconded, it was

RESOLVED: That the Club hereby expresses its thanks to all officers for their efforts during the past three years.

He then submitted the report of the Nominating Committee and, there being no other nominations, the following were declared elected: John C. Oberlin, President; Robert H. Bates, Eastern Vice President; Stephen H. Hart, Central Vice President; David R. Brower, Western Vice President; Lawrence G. Coveney, Secretary; Carlton P. Fuller, Treasurer; Ursula Corning, Bradley B. Gilman, Henry S. Hall, Jr., Councilors for 1956-58; and William S. Child, Councilor for 1956-57.

There being no further business, it was

VOTED: To adjourn.

The business meeting was followed by three lectures of unusual interest, Mr. Bernays showing slides of the remarkably sheer-sided peaks of the Logan Mountains (N. W. Territories), and Mr. Kauffman describing the first ascent of N. Pucahirca in the Cordillera Blanca of Peru. Mr. Mutch, some of whose slides had been stolen and others lost in processing, nevertheless gave a very clear account of the first ascent of Istor-o-Nal and urged the advantages of a small party when attempting such exploits in Pakistan.

Everyone crowded into the American Alpine Museum to view the many displays and especially the Quartermaster exhibit of cold-weather clothing and equipment.

The Fifty-third Annual Dinner of the Club was held at the Cosmopolitan Club at 6:30 P.M. A number of distant members were present, and Col. Ata-Ullah of Pakistan was among the guests.

Mr. Gilman made a few appropriate valedictory remarks and presented the incoming President with a handsome album of posed and candid photographs taken at Directors' meetings during the past several years. This will become a rather unusual item in the Club's archives and already has aroused some interest and considerable amusement.

Dr. E. Frederick Roots gave an illustrated lecture on an arctic survey, showing the previously largely unknown peaks of Axel Heiberg Island as well as fascinating views of wild animals and of a combined helicopter-sledge dog transportation system that must be unique. Mr. Henry S. Francis, Jr., concluded the program with a talk on the Karakoram, showing breathtaking slides of its greatest mountains from unfamiliar angles.

The meeting was adjourned at 11:30 P.M., but many members lingered for some time, chatting in groups, and then revisited the Clubhouse the next day.

JOHN C. OBERLIN, *Secretary*

THE AMERICAN ALPINE CLUB LIBRARY

On March 31, 1956, Mrs. Lena Towsley Hinds will complete her service as Assistant Librarian. She has been with us four years and has devoted herself entirely to the cataloging of the books in the Main Library and typing the cards for them. She has established a very fine dictionary catalog of author, title and subject cards, which now nearly fills 36 sections of the catalog cabinet. Her Index to the subjects, in a notebook of 133 pages, reveals the tremendous scope of the references. Research workers and other consultants of the catalog have praised her work highly. We shall miss Mrs. Hinds' cheery presence greatly and regret her departure from the Club. Our best wishes go with her.

We take great pride in the fact that our Main Library of 5,730 volumes is not a mere collection of books, but that its resources are now available to all. When you visit the Library again, will you please test the catalog for obtaining the information needed. We trust that you will be able to say, as did one of our members, "It works!"

To keep up the proper cataloging, not only for the books, but also for the unbound material and carry on all the other routine library duties, we need a permanent Librarian. Can we not establish a Fund in some way, for this purpose, by appealing for contributions from some Foundation or individuals—non-members, whom we can interest in The American Alpine Club? I believe that this can be done. Our service to the public is surely educational. At any rate it would do no harm to make the attempt.

Other mountaineering clubs have salaried Librarians. It does not seem fair for us to depend upon the generosity of a few members, year by year, to pay for the services of a much needed worker. We reached the point several years ago when the amount of work to be done was just too much for a volunteer. I am sure that our new Chairman of the Library Committee will welcome any suggestions you may offer.

Various problems, such as more shelf space, and possibly a re-arrangement of the book cases will have to be considered soon. And, of course, there is the seemingly eternal problem of caring for unbound material, slides and photographs. Our many unframed prints have been listed, and Tim Mutch, we are happy to state, has taken over the revision of the map collection.

We wish that our Lending Library, which includes many standard works, were used more often by our distant members. If the rules for the Lending Library were simplified, would this encourage you to borrow more books? A revised list is now ready for distribution and will be sent upon application to the Assistant Secretary. Additions in the future will be mentioned in the *American Alpine Club News.*

Although we have acknowledged contributions to the Library, we wish to record here our gratitude for all donations and express our thanks to those who have helped in the Library work.

This is really my last report in regard to the Library. Although I may serve for a while on the Library Committee to "tide over" the present situation, I am eager to embark upon those long delayed adventures mentioned in my Librarian's report two years ago concerning "The Case of the Rambling Buck."

My good wishes to you all,

HELEN I. BUCK, *Chairman of the Liberty Committee*

THE AMERICAN ALPINE MUSEUM

The American Alpine Museum began to take form in the Club's past as soon as we had quarters of our own in which to display exhibits. The walls of our rooms at the old Explorer's Club, which we occupied in 1928, indicate this in the picture published in our first *Journal*.[1] It was continued in 1933 when we moved to 140 E. 46th St. Our greatest progress, however, came with the acquisition of the present Clubhouse in 1948. At the annual meeting at Boston in 1941, the writer's presidential address[2] specifically broached the *museum idea*, and we were now in possession of adequate space to broaden this activity. Within a few months showcases were installed in the main meeting room of the first floor, and various exhibits successively placed on view, the library walls also serving for display.[3]

In January 1949 in connection with a symposium on glaciers, a joint program with the Arctic Institute, a large group of early prints of glaciers of the Alps was shown. This was followed by Swiss and Austrian costume prints of the 19th century. We have since presented exhibits of rare books, prints and drawings of big game, items from Scandinavia and the Pyrenees, together with permanent installations of historic ice axes and alpenstocks, paintings and documents.

Our premises included a small rear building, formerly a stable, and, in view of increasing attendance at meetings, it became evident that more space would be available in the main auditorium if the larger exhibits were moved to the stable. Accordingly, by private subscription and without use of any Club funds, the required amount was secured. Under the able supervision of our member, William Latady, the stable was reconstructed and opened as the American Alpine Museum in October 1954. The content and arrangement has been described recently in the *Journal*,[4] and successive exhibits will be announced in our *News*.

In order to catch the eye, we began with an elaborate showing of Alpine costume prints and actual costume accessories. During December, through the period of the annual meeting, the Quartermaster Department of the U. S. Army loaned us equipment and clothing of mountaineering interest. We are further showing prints by J. M. W. Turner and etchings of modern British etchers, as well as lithographs by the late Ernst Hodel, of Lucerne.

The museum has already attracted more than 500 visitors, with a satisfactory impact, particularly on foreign mountaineers, who are surprised at the extent and quality of our collections. From a practical standpoint,

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[1] *A. A. J.* i, 87 [2] *A. A. J.* iii, 323 [3] *A. A. J.* iv, 268 [4] *A. A. J.* ix, 153

the museum, through its availability to the public, has considerably improved our tax status. We hope that as many as possible of our non-resident members will visit it and agree with the justification of the Club's effort.

J. MONROE THORINGTON

REPORT OF THE CONSERVATION COMMITTEE

January 9, 1956

Conservation of natural resources—including the preservation of mountain scenery—can hardly be discussed without reference to legislation. The American Alpine Club does not take part in attempts to influence legislation. But this circumstance implies no restraint on members, who thus express their individual opinions, and it offers no bar to the dissemination of information on conservation subjects by the Club or by its Committee. With these circumstances in mind, the Committee has, following the practice of prior years, assembled information on conservation subjects; and its members have, individually, written and wired to legislators, newspapers and periodicals to express their views on movements affecting mountainous areas, the protection of scenery and their proper recreational use.

It is cheerful to note that such efforts have resulted (at least for the time being) in saving Dinosaur National Monument from desecration by a high dam proposed for power production purposes. Also, in a New York referendum vote, a final victory has been achieved in the Adirondack Mountains against persistent, ingenious and almost successful efforts extending over a long period of years to invade the Forest Preserve with the Panther Mountain reservoir project for power purposes. An outstanding benefit from these victories, one national and the other local, is the reminder to legislators that the public is really interested in protecting its National Parks and wilderness areas from commercial exploitation. Similar threats to other areas are now less serious than before.

Meanwhile, as always, new threats have appeared. The latest one is an active proposal of the Forest Service for partial clearance of timber from Western mountains in the interest of producing more runoff of water for irrigation purposes. The government officials concerned in this project point out the obvious fact that trees absorb and evaporate a lot of moisture, including snow caught in the branches which never reaches the ground; and apparently they feel that a little more water for irrigation is a more valuable thing than forested mountain slopes. Your Chairman,

as an individual, has been in correspondence with various legislators in opposing this viewpoint.

As always, grazing interests are encroaching on wilderness areas high up on mountain slopes, and constant vigilance is necessary to restrain them. Mining claims have long constituted a means of destructive invasion in our National Forests, particularly in mountain country. Better protection seems to be promised with new legislation that will end the privileges heretofore enjoyed by phony mining claims under the old laws.

HENRY I. BALDWIN GEORGE E. GOLDTHWAITE, *Chairman*

REPORT OF THE EXPEDITIONS COMMITTEE

January 1956

It is the aim of the Expedition Committee to be of active assistance to expeditions large and small in as many ways as possible. As a result of this policy we have launched several ambitious projects, and although some are only on paper, they are included to indicate our objectives.

Books—It is desirable to have books of value to expedition planning available to members throughout the country. So as to avoid duplication of effort we have prepared a mimeographed list of such pertinent books already in the A.A.C. loan library. As funds become available, the Committee hopes to increase the number of volumes thus available, since many of the most recent and valuable books are not in the *loan* library.

Area Reports—The Committee has two very fine reports available for loan. They are *Mountaineering Expeditions in Garhwal, Kumaon and Tehri Garhwal* by Adams Carter and *Sikkim Himalaya* by Robert Dodson. These are reviews of the climbing that has been done and can be done in various areas. We hope to include reports on Peru, other Himalayan regions, and the British Columbia Coast Range soon.

Maps—Although the Committee already possesses several maps of the Himalaya, Karakoram and the Peruvian Andes, they will not be available for loan until we can get duplicates. Each map sent out on loan will carry complete source information so copies may be obtained by those needing them. Eventually we expect to have available by one method or another, the best maps of all important areas.

Photos—The Photo library is entirely on paper, but we are planning to build a comprehensive collection of photos of various peaks and areas. The photos will be available for loan, and copies will also be available at cost. Each photo will carry complete data and credit lines.

Equipment—Comprehensive lists of equipment suitable for various areas and conditions are being prepared as an aid to planning, based on past experience.

If the Committee is to act as clearing house for expeditionary information, we must receive a steady supply of current information and photographs from all expeditions returning from the field. All expeditions making use of the Committee services in the future will be expected to cooperate fully in supplying the information we need when they return. This is an ambitious program, but if the A.A.C. is to retain its leadership in American mountaineering such a program must be successfully set in motion.

GERRY CUNNINGHAM
GEORGE BELL, *Chairman*

REPORT OF THE MEDICAL COMMITTEE

January 1956

With the recent addition of Nello Pace and L. Bruce Meyer, both of whom were members of the California Himalayan Expedition, the Medical Committee now has a full complement of highly qualified members to expand its program. During the past year the Committee served primarily to provide recommendations when its advice was sought on expedition medical problems. The contemplated program, however, is somewhat more ambitious in that it envisages a more comprehensive information service on medical and physiological problems peculiar to mountaineering. After investigating the subject, the Committee hopes to prepare a series of reports on such topics as frostbite, respiratory disease, expedition hygiene, serious injury, expedition medical supplies lists, etc. If interest seems to warrant it, perhaps articles on a few pertinent physiological subjects such as stress and acclimatization to high altitude will be prepared for the *Journal*.

Advisory service to prospective expeditions will remain an important function of the Committee. Inquiries may be directed to the Committee through the American Alpine Club Office or through any of the Committee members.

BENJAMIN G. FERRIS, JR., M.D.
L. BRUCE MEYER, M.D.
NELLO PACE
ROGER S. WHITNEY, M.D.
WILLIAM SIRI, *Chairman*

CLUB PUBLICATIONS

THE AMERICAN ALPINE JOURNAL, annually from 1929, illustrated. Price and availability upon request. Current issue, $3

A CLIMBER'S GUIDE TO THE ROCKY MOUNTAINS OF CANADA, by Howard Palmer and J. Monroe Thorington, revised edition by Thorington, 1953. This guide covers all peaks of interest to climbers with routes and map references. $4 ($3 to members)

A CLIMBER'S GUIDE TO THE INTERIOR RANGES OF BRITISH COLUMBIA, by J. Monroe Thorington. Covers the Selkirk, Purcell (including Bugaboos), Monashee, and Cariboo ranges. Third Edition, 1955, $3 ($2.50 to members)

A CLIMBER'S GUIDE TO THE CASCADE AND OLYMPIC MOUNTAINS OF WASHINGTON. by Fred Beckey. Contains 1,000 routes on 500 peaks, with photographs, maps, and index. $4 ($3 to members) Supplement on new routes available separately, 50 cents

A SURVEY OF EARLY AMERICAN ASCENTS IN THE ALPS IN THE NINETEENTH CENTURY, by J. Monroe Thorington. Illustrated. $2 ($1.50 to members)

WHERE THE CLOUDS CAN GO: THE AUTOBIOGRAPHY OF CONRAD KAIN, edited by J. Monroe Thorington. A reprint (1954) of the book originally published by the club in 1935. $5

ACCIDENTS IN AMERICAN MOUNTAINEERING. Annual report of the Safety Committee of the American Alpine Club. 25 cents

The American Alpine Club, 113 East 90th Street, New York 28, N. Y.